

REPORT
ON THE
LAND REVENUE SETTLEMENT
OF THE
BETUL DISTRICT

IN THE
CENTRAL PROVINCES

EFFECTED DURING THE YEARS

1894 TO 1899.



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REPORT ON THE LAND REVENUE SETTLEMENT

OF THE

BETUL DISTRICT.

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PART I.

GENERAL DESCRIPTION OF THE DISTRICT.



SECTION I.

GEOGRAPHY.

With the exception of 15 or 20 villages on the southern border, which are situated below the ghât on the edge of the Berar valley, the whole area of the district lies on the Satpuras and occupies nearly the whole width of the range. It is bounded on the north by the Hoshangabad District: on the west by Hoshangabad and the Ellichpur District of the Berars: on the south by Ellichpur and Amraoti and on the east by the Chhindwara District and Jagirs. Position and boundaries.

2. The mean elevation of the area within these bounds is about 2,000 feet, but there are not a few ranges and peaks running up to more than 3,000 feet, and in the south-west corner of the district, the Khamla Plateau reaches a height of 3,789 feet. The general slope of the country is from east to west. With the exception of the small valleys of the Bel and Wardha rivers, the district is drained into the Indian Ocean by the Tapti and the tributaries of the Nerbudda. Principal natural features.

Roughly speaking the northern half is watered by rivers flowing north and west to the Nerbudda and the southern half by the Tapti and its affluents. The Bel and Wardha rise on the north and east edge respectively of the central plateau and flowing east and south reach the Bay of Bengal *via* the Wainganga and the Godaveri. The main chain of the Satpuras running near the northern border of the range, reaches its highest point just beyond the north-east corner of the Betul District. Shortly after crossing the border it is interrupted by the wide valley of the Tawa and its tributaries, the Daryakho and Phopas. Rising again near Shahpur it runs a few miles due west and breaks off in the hills of Bhowargarh and Jamgarh which stand above the Morand valley. Thereafter the backbone of the range, so noticeable further east and north, is lost in a tumbled mass of lower peaks and ridges intersected in all directions by narrow valleys. To the south of the country occupied by the main ridge and the spurs which it throws off, there lies a wide undulating plateau, occupying about half the area of the district, and stretching on the east to the forest-clad gorge of the Wardha River near the Chhindwara border, on the south to the belt of steep hills and deep ravines which mark the final upheaval of the land before it falls to the level of the Berar plains, and on the west to the wild country of Khalibhit and the

Melghat of which a large slice falls within this district. Briefly the tract to be dealt with consists of a central plateau surrounded by a belt of hilly and forest-covered country, wide on the north and west and narrower on the east and south. The rock formation in the northern third of the district is sandstone, elsewhere generally trap. In the sandstone country the predominant soil is thin and sandy, and in the trap country shallow and very stony. For the present purpose the district may be divided into three sections, (1) the sandstone country: (2) the central trap plateau: (3) the hilly trap country.

Sandstone country.

3. A glance at the map will show that the Bel and Machna rivers rise close together and flowing the one due east and the other due west form a line running nearly due east and west across two-thirds of the width of the district. If this line were continued to the western border, it would approximately mark the boundary between the sandstone and the trap, and consequently between the first and second sections. It will be gathered from what has been said above that a large part of the country lying in the first section is occupied by the main ridge of the Satpuras and its southern spurs, and by the valleys of the Morand and Tawa: to these areas may be added the villages on the north bank of the Bel and a part of the valley of the Machna. About half of this tract is covered by forest-clad ranges, which are of no use for agricultural purposes and are included in the Government forest reserves. In the four large valleys between the hills, lies an undulating country intersected by innumerable water-courses and covered principally with a thin sandy soil of little value for cultivation. A narrow strip of better soil borders the larger nalas, but the best soil in many villages is fit to grow nothing better than gram, and there are few villages containing large blocks of wheat land. Poor as the country is it is none the less nearly fully cultivated except in that part which lies between the main ridge of the Satpuras and the Hoshangabad border. The best soil in this section of the district lies in the block of villages extending from Mandai Buzurg on the east to Itia on the west, and from Hiwarkhedi on the south to Atari on the north and in the hill-surrounded basin of Shahpur at the junction of the Machna and Tawa rivers. But the most valuable villages are those on the north bank of the Bel where the excellent water-supply and suitability of the soil for irrigation enable the cultivators to put large areas under sugarcane. Though the prevailing soil of this section of the district is of little value for cultivation, many kinds of forest trees grow to perfection; amongst them several which bear valuable flowers or fruit, such as the mahua, harra and achar. These trees are now protected by law, and it has always been the custom to spare them from the axe when clearing land for cultivation, so that the malguzari lands are thickly dotted with fine trees. In the rains when the ground is green with young crops or grass and the trees are in full leaf, the clumps of mahua and harra lend the country a singular resemblance to an English park.

The central trap plateau.

4. The next section to be dealt with, the central trap plateau, contains villages of every grade from the best to the poorest conceivable. There is no Government jungle in this part of the district, and indeed, except in the valley of the Tapti which cuts a deep groove through the southern part of this plateau and on the steep sides of some of the small hills which run here and there across its face, mangoes by the wells are almost the only trees to be seen. The poorest portions of this tract may be described as a rolling stony plateau intersected by numerous narrow valleys, and the better parts as an undulating plateau of fertile wheat and cane land interrupted here and there by low stony hills. Every village has its black soil valley of greater or less extent, but few outside three well defined tracts have more good than poor soil. Still here and there where an unusually large nala winds through the stony hills (as at Jowalkheda, Bhaisdehi and Atner), blocks of black soil measuring some thousands of acres are found. The three tracts referred to are: the plain immediately round Betul lying between the Machna and the deep Tapti valley comprising about 50 villages: the strip of level country on the south bank of the Bel comprising about 20 villages, and 80 or 90 villages in the south of the Multai Tahsil lying in the Ambhora and Tapti valleys. The first-named tract is covered entirely with black soil, and in the other two poor soils cover only a small area. The whole of this section is blessed with an excellent water-supply generally at small depth

Sandstone country.—(Concl'd.)

Name of assessment group.			Number of villages.
<i>Multai Tahsil.</i>			
Tawa valley	...	...	35
Aonria Bordehi	...	...	84
		Total villages	422

Central trap plateau—

<i>Betul Tahsil.</i>			
Chhachhundra	...	...	25
Betul	...	...	54
Tapti	...	...	71
Atner	...	...	63
Bhaisdehi	...	...	40
<i>Multai Tahsil.</i>			
Masod-Patten	...	...	67
Dahwa Dunawa	...	...	91
Jowalkheda	...	...	76
		Total villages	487

Hilly trap country—

<i>Betul Tahsil.</i>			
Chandor	...	...	36
Khaloti	...	...	39
Khamapur	...	...	73
Bhaisdehi	...	...	25
<i>Multai Tahsil.</i>			
Khaloti	...	...	32
Chichanda	...	...	29
		Total villages	234

Areas.

7. The district is divided for fiscal purposes into two tahsils with headquarters at Badnur and Multai. The area of malguzari lands in the Betul Tahsil is 1,048,281·22 acres and in the Multai Tahsil 570,095·77 acres or about 2,529 square miles in the whole district. The area of Government forest is 1,272 square miles, of which about 195 square miles consisting of culturable lands have been demarcated and surveyed for ryotwari settlement. The total area of the district is then 3,801 square miles, of which 2,529 square miles are settled with malguzars, 195 square miles are now being settled with ryots direct, and 1,077 square miles are Government forest reserves.

SECTION II.

HISTORY.

The kingdom of
Kherla.

8. The earliest historical record of the country now included in the Betul District is contained in the 'Wiwek Sindhu' written by Mukund Rao Swamy, a religious ascetic, who lived about 1000 A. D. This book is said to be the earliest work in the Mahratti language. It deals primarily with religious subjects, but contains a few incidental references to the rulers of the Kherla kingdom.

from the surface, and wells are numerous especially in the 50 villages round Betul and the higher parts of the plateau in the Multai Tahsil. Many of the nalas also contain a running stream of water till the end of the cold weather, and there are four or five perennial rivers—the Machna, Sanpna, Tapti, Ambori, Tawa (not to be confounded with the larger river of that name referred to above) and the Kharpada. The poorer parts of this plateau owing to the lack of trees and the terribly stony character of the soil, present, except in the rains, a very barren and unpromising appearance in strong contrast to the valleys filled with wheat and sugarcane, and one wonders that such apparently useless soil should have been taken up for cultivation; but these uplands with a normal rainfall and frequent resting fallows will grow fair crops of juar, oilseeds and the lesser millets, and are by no means so valueless as they appear when not under crop. Large villages are fairly numerous in this section of the district, and the best parts of the plateau are, as will appear below, thickly populated.

5. The last section of the district is the hilly trap country. This lies on the east, south and west between the central trap plateau and the border of the district. On the east it consists of a narrow belt of ravine-cut country through which the Wardha runs in a deep gorge. Though there are no high hills here, a good deal of the country is unculturable owing to the numerous deep nalas with precipitous sides, but there is no Government forest. On the south too the belt of hilly country is narrow at its east end south of Pattan and Masod, but widens towards the west till at the south-west corner of the district it measures some 15 miles from north to south. The formation of the hills in this part of the country is curious. The sides are exceedingly precipitous, often nearly perpendicular for 500 feet or more, and the valleys narrow, but the tops of the hills are broad and flat. In the west the Khamla plateau affords sufficient culturable land to support a block of 10 or 15 malguzari villages, but elsewhere in this tract the malguzari lands are much scattered lying in small narrow valleys running up into the hills from the Berars and in a narrow strip of level land lying between the foot hills and the border. The greater part of the area has been reserved as Government forest, but the flat tops of all the larger hills have been cultivated for many years and support some considerable villages which have now been excised for ryotwari settlement. The soil of this part of the district is shallow and stony, but as the climate approximates to that of the Berars (except on the Khamla plateau), the crops grown are of good class. Cotton being the most valuable and juar the most largely grown. The Khamla plateau grows hardly anything but kutki, and is chiefly of value as a breeding ground for cattle. The last part of this section to be described is that lying to the west of the central plateau. It consists of the forest covered valley of the Tapti and is a slice out of the Kalibhit and Melghat tract of Hoshangabad and Ellichpur, between which districts it projects in an oblong some 15 miles wide by 20 long. The whole area is a confused mass of small hills and valleys, and is nearly all under Government reserved forest. The malguzari villages lie for the most part in the narrow strip of level land along the south bank of the Tapti and in a small block of undulating land in the north-east of the tract where the trap formation merges into sandstone and the country is rather less hilly. There is some good soil in places, but it is at present of little value owing to the depredations of wild beasts and the poor character of the cultivation.

6. The number of malguzari villages in each of these three main divisions of the district and the assessment groups in which they fall are shown below :—

Sandstone country—

Name of assessment group.	<i>Betul Tahsil.</i>			Number of villages.
Bhowargarh	...	...	...	62
Tawa valley	...	...	...	69
Nasirabad	...	...	...	80
Chhachhundra	...	...	...	16
Dhaba	...	...	...	76

Distribution of villages between the three tracts.

under whose patronage the saint passed the latter years of his life. There are interesting references to the manner in which the Swamy first came to Kherla, the miraculous digging of the tank below the fort, &c., but all that need be mentioned here is that the 'granth' affirms that the rulers of Kherla were in those days Rajputs, of whom the last was Jaitpal. Tradition has it that after the death of the saint, Kherla was besieged by the Mogul General Rahman Shah Dulla Ghazi, who was sent by the king of Delhi to avenge the death of a Muhammadan fakir killed by the Raja Jaitpal. Here again I may omit the details of the stories current in the district regarding the long investment of the fort and may merely say that it is believed that the Raja did not yield till after a 12 years seige. The Mussalman General was killed in the last assault. His head is buried in a tomb at Umri immediately below the fort and his body at Ellichpur in the Berars. These tombs are objects of pilgrimage, and two villages in this district are held free of revenue for support of the shrine at Umri. The next written record of the history of the district is to be found in Farishta's writings. He relates that at the end of the 14th century the rulers of Kherla were Gonds, possessed of considerable wealth and power, and so strong in arms as to venture to try conclusions with the Muhammadan rulers of the Berars and Malwa. Eventually in 1433 Hoshangshah, Raja of Malwa, conquered the territory of Kherla, and remained in possession of it till the kingdom of Malwa was, in the middle of the 16th century, incorporated in the dominions of the Emperor of Delhi. How the Gonds came into possession of the kingdom after the conquest by Rahman Shah Dulla is not known. But it is possible that they were the descendants of Jaitpal, who may not improbably have been a Gond and not a Rajput.

9. After the kingdom of Kherla fell under the sway of the Emperor of Delhi, it was governed by the Gond Rajas of Deogarh in the Chhindwara District, who had been converted to Islam and owned allegiance to the Emperor. In the middle of the 18th century, the Bhonslas of Nagpur interfered in a quarrel between rival claimants to the throne of Deogarh, and as the price of their assistance received half the revenues of the kingdom for a few years, till another dispute between the heirs led to the annexation of the country by the Rajas of Nagpur. In 1818 the district formed part of the territory ceded to the British, and in 1826 it was formally included in our dominions by treaty.

Later history.

10. The tomb of Mukund Swamy, now about 900 years old, is still to be in the precincts of the fort, but the ruins of the stronghold itself are of origin and probably date from the time of Hoshangshah although commonly rumoured that the descendants of Rahman Shah built it after defeat of Jaitpal. The only dated relics are two stone pillars on the road the fort on which the distances to certain places are marked. But these signed by Burhan Shah, Gond Raja of Deogarh, and are of comparatively origin. After the annexation by the Bhonslas, the capital of the district removed to Betul and the fort was destroyed, the inhabitants of the neighbourhood being encouraged to remove the cut stones from it to build their own village. The remains are now protected by a clause in the record-of-rights of village. I may add that there are rumours of a Gauli kingdom and of a earlier Government by a Lohar who is known as Rajall, and is often connected with Jaitpal. There are also some old temples and baolis at Pahawari Shahpur which are said to have been built by the ancestors of a colony who still inhabit the village, and who if they were the builders must possessed considerable power and wealth at one time.

Old remains.

11. Until the country fell under our rule the Gonds had a very bad name and marauders of a daring type. They used frequently, it is said, a dash into the rich country of the Berars of the Nerbudda valley and looting and killing all night return straight across country to their jungle guided by the light of a bonfire on some commanding peak. Besides of Kherla, they built a number of strongholds on the most inaccessible the jungle. Most of these have now crumbled away, but at half a dozen the ruins are still to be seen. Nor were they the only robbers in the A Mussalman by name Sher Shah, said to have been originally a fanatic, established himself at Borgaon on the Wardha River and levied

State of district shortly before British rule.

tribute from the neighbouring rich country in what is now the south of the Multai Tahsil. His son became eventually such a scourge to the country that the Raja of Nagpur sent an army against him and after taking his castle, deported the inhabitants of the village which had grown up under the walls, to Multai, thus supplying the nucleus of the little town which now exists. The Pindaris under Gaffur Khan also passed through the Multai Tahsil more than once, and bands of Thugs frequently traversed the district on their way to the rich villages of the Nagpur country and the Nizam's dominions.

British rule.

12. From the conclusion of the Maratha wars till the present day, there has been little to disturb the peace of the district. The mutiny scarcely touched Betul. There was a futile attempt at a rising, but it was not of sufficient importance to affect the prosperity of cultivators or interfere materially with the administration of the district. A regiment of Gonds, 800 strong, was raised by Colonel Maclean for service at Jhansi.

SECTION III.

AGRICULTURE.

Main divisions of agriculture.

13. There are two harvests, the rabi and kharif, at which the cold weather and the monsoon crops respectively are reaped. Rabi is grown on all soils which retain moisture long enough to support a crop in the cold weather without irrigation. In other words, the poor soils grow the kharif and the better soils the rabi. But kharif is sometimes grown on good land, either as a catch-crop before wheat or gram or in the course of rotation. It follows from this and from what has been said above regarding the natural features of the district that kharif crops are grown in all villages, but there are a few, such as those on the Khaml plateau, which grow no rabi, and many have only a few acres of rabi. An occupied land which is not capable of growing rabi or sugarcane without irrigation is known locally as a barra, whether the soil be bardi, retari, mutabarra or sihar. High-lying land capable of growing rabi is called morand and black soil in a valley, kali or dol irrespective of the quality of the soil. Besides these there are 'makka baris' (maize gardens behind the house) and 'santabaris' (sugarcane gardens). These local names serve to indicate the five main divisions into which the agriculture of the district is divided.

Constitution of village lands.

14. In the central trap plateau which contains the greater part of the malguzari area, the village lands almost always consist of a section of one or more valleys of greater or less width with the stony slopes on each side and the high lands above them. If the valley or valleys be wide and the adjacent slopes of moderate gradient, the village is a good one; if narrow, it is of indifferent quality, unless the water-supply be unusually good. The village site is generally placed on a patch of poor land lying just above the best of the black soil fields, and if the village area be large, there is not infrequently more than one hamlet. The formation of this part of the country results in a great variety of soils within a small area. A cross-section of the usual valley and adjacent slopes would ordinarily show all grades of soil beginning from the poorest stony land at the top of one slope through the various classes of black soil in the valley to bardi again at the top of the opposite slope, while on the top of the dividing ridges there may or may not be patches of shallow black soil in the depressions. Consequently most holdings contain at least three of the descriptions of land referred to above under the local names: there are few cultivators who have not makka bari, barra and kali or morand. This does not of course apply to the block of villages round Betul and the few good villages in the Bel valley where, as stated in Section I, the villages consist entirely of black soil. In the sandstone country and jungles surrounding the central plateau a good many holdings consist of barras only, but the majority of cultivators have a few acres on which they can grow masur or gram. In a few villages along the southern border and in the deep valleys which run up into the hills from the Berars, the agriculture is similar to that of the Berars and Nagpur plain, and what black soil there is, is generally kept under cotton or juar.

15. Besides the five principal classes into which they divide land, which are enumerated above, the cultivators of the district distinguish between the different qualities of soil. Kali and morand, which as used by them denote rather differences of position than of soil, cover all black soil in their terminology except the very shallow land found on the dividing line between rabi and kharif soils, which is known as bhabar. This soil is sometimes so poor that it will grow kharif only. Bardi is the local name for the poorest kind of soil in the trap country. It may be qualified as 'lal' or red bardi, or 'garpathar' or flint bardi. The former is the commonest. In the sandstone villages all poor land which will not grow wheat is known as sihar or retari. In some villages one name is more often used, in others the other. Strictly speaking retari stands for the poorest kind of sandy soil and sihar for something a little better, which will grow gram or juari, but unless cross-questioned on the point, cultivators will generally use the two words indiscriminately. In addition to these names which are used all over the district, there are some which are used locally only: as for instance, 'thorat' which is a sandy loam found in small quantities in the east of the sandstone tract and 'thotar' a sandy loam of inferior quality found in large areas in the valleys of the Phopas and Daryakho tributaries of the Tawa; another word in common use in the south of the district to describe inequality of soil in a small area is 'takil': this word is applied to fields in which the depth of the soil varies every few yards from a few inches to a couple of feet or more. The only words used commonly to denote position are:—bharkila (cut by nalas), dol (low-lying), tagar (sloping and high-lying), ujhar (damaged by wild animals), chopan (water-logged), khari (land which receives the surface drainage from the village site).

Soil classes recognized by cultivators.

16. It was considered that the local distinctions did not provide a sufficiently elaborate classification, and accordingly at survey the list of the soils was a little amplified on the lines followed in the settlements of the Nerbudda valley districts. Regard was paid firstly to the class of cultivation for which the land was suited, secondly to the kind of soil, and thirdly to differences of position which affected its productiveness. Under the first head, land was classed as (1)—gohari (capable of growing wheat), (2) santabari (sugarcane land), (3) tarkari or phalbari (vegetable or fruit gardens), (4) mutfarkat (minor crop land). It must not be supposed that this involves a system of assessment based on cropping. The fact that a field will grow wheat indicates that it possesses inherent qualities which render it more valuable than another field which will grow nothing but kodon or jagni, and which would be classed as minor crop land. As a matter of fact wheat land is always sown more or less frequently with wheat in this district, but if a field were found which had never grown wheat, but was obviously capable of yielding a crop of wheat, it would be classed 'gohari.' Similarly, if land grows sugarcane, it shows in this district, where the crop is always irrigated from wells, that the land is so situated that there is a good water-supply at hand, and the Government has as much right to share in this advantage as in any other peculiarity of soil or position which enhances the value of land, provided that adequate allowance is made for any expense which may have been incurred by the cultivator to make the water available for agricultural purposes. The tarkari bari class is sub-divided into irrigated and dry. To grow vegetables a much smaller water-supply is needed than for sugarcane, and the presence of this crop in a field would show *prima facie* that the land was less valuable than cane land, but of greater value than wheat land. It may be objected that if sugarcane or irrigated vegetable gardens are found dotted about in a block of soil of homogeneous superficial appearance, we should, if we are not assessing on crops, class the whole area as sugarcane land on the assumption that the supply of sub-soil water in all parts of the block is similar. But so little is known of the distribution of sub-soil water that there is no foundation for such an assumption. The numbers of holes which are the result of futile attempts to find water in the neighbourhood of wells which water large areas of sugarcane are sufficient evidence of this. In short, land which does not grow crops irrigated from wells may be so situated that a good supply of water could be obtained from a well, but we cannot be certain of this till the well is actually dug. The unirrigated garden land is practically confined to the land in the immediate vicinity of the village site, which is naturally manured by the drainage of foul water from the 'basti' and the sweepings from the houses. This renders it specially suited for the growth of certain crops which

System of soil classification followed at Settlement and main divisions of soil.

will not thrive in unmanured land, such as maize and tobacco, and as this peculiarity is not the direct result of the labour of the cultivator it appears fair to assess it.

Soils.

17. At first only eight soils were recognized including only one class of sandy soil which was called sihar, but before completion of survey, it was found necessary to discriminate between the small patches of sandy loam and the large stretches of almost pure sand which are found in all villages in the north of the district and a retari class was included. The list of soils as finally determined then stood as below :—

Kali I and II.	Sihar.
Morand I and II.	Retari.
Mutabarra.	Bardi.
Kachhar.	

Kali.

18. By the local nomenclature kali is applied to all low-lying black soil, but in classing the soil for assessment purposes we have given it the meaning which it has in the districts of the Nerbudda valley and have applied it only to a black or dark-brown clay soil of great depth, in fact to the best wheat and sugarcane land. To have adhered to the local interpretation would have meant failure to differentiate the different qualities of low-lying black soil. It is distinguished from morand by being less friable and heavier bulk for bulk. It cracks sooner and to a greater extent than morand. There is very little soil that answers to this description in the district. The largest blocks of it are in the villages of Badora, Betul and Sasabar. There is none of the very black kali which is found in some places in low-lying districts, and no land was classed kali I. The area under kali II is 6,650 acres.

Morand.

19. Morand is a friable loam, black or brown in colour. It does not hold water so well as kali, unless in an exceptional situation, and is consequently less valuable for rabi cultivation. It is, I think, generally not more than 9 or 10 feet deep, and the bed rock is sometimes only a couple of feet below its surface. In the trap country it often contains black stones in considerable quantity and more rarely flints, and in the sandy villages is often more or less mixed with sand. All over the district it is generally more or less thickly sown with small particles of lime known locally as chunkari. Morand II is inferior to morand I, and this inferiority may be evidenced by (a) want of depth, (b) lightness of colour, (c) large admixture of stones or lime particles. In classing morand it is usual to examine the sides of nalas or the shafts of wells to ascertain the depth of the soil, and if necessary to test it by digging. But in many places the lie of the land and the appearance of the surface soil afford a sufficient indication of its depth. If there are a quantity of black stones on the surface and the cultivator does not allege that the land is bhabar and it is not situated at the bottom of the valley, one would be safe in assuming that it is too deep to class mutabarra and not deep enough for morand I. Lightness of colour is caused by the admixture of particles of sand or gravel which render the soil less fertile. The presence of many stones, besides indicating that the land is shallow, is in itself a defect as the stones interfere with proper cultivation by the plough and bakhar.

Mutabarra.

20. Mutabarra corresponds to the local 'bhabar.' In this class I included (a) black soil not more than one foot in depth, and (b) soil in the trap country not capable of growing rabi, but distinctly better than bardi. It was sometimes necessary to ascertain the depth of black soil by digging before deciding whether to class it as morand II or mutabarra, but often the outcrop of the bed rock or moorum in small patches of the field would sufficiently indicate the thinness of the soil covering. Here also wells and nalas were often of use. One of the best tests of the superiority of the kharif mutabarra over bardi is the proportion of fallows allowed in the land. The results of this test may be checked by cropping and situation. Mutabarra of the first kind is generally found on the border line between morand and bardi, and of the second kind either between the first kind and bardi or in shallow depressions amongst large stretches of

bardi. The best black mutabarra will grow wheat in rotation with masur and gram or juari, the kharif mutabarra will grow anything from juari and tilli downwards.

21. Bardi is the poorest kind of soil in the trap country. The commonest variety of this soil is a red gravel thickly strewn with reddish stones as big as a cobble stone; but it is found in some places almost free of stones and sometimes full of yellow flints. The poorest kind of all is a soft but very shallow ash-coloured soil which is found in small patches along the southern ghâts: there is much of it at Barkhed near Atner. The red and flint bardi grows juari and tilli in rotation with the minor millets and jagni, but requires frequent fallows. Three years' cropping and three years' rest is a fair average, but as regards this subject please see paragraph 73 dealing with rotation. If we except kachhar which is so rare (27·53 acres in the district) that it requires no description, this completes the tale of soils in the trap country.

Bardi.

22. In the sandy villages morand I and II are found, but the places of mutabarra and bardi are taken by sihar, and retari. Sihar is a sandy loam found along the banks of small na'as running through sandy barras and at the edge of morand. In its best form it is capable of growing wheat, and in its worst it is sown with juari, gram and tilli. It is well suited for irrigation and grows a great deal of sugarcane in the villages on the north bank of the Bel. By retari is meant all sandy soil that is poorer than sihar: it will grow nothing better than kodon, kutki and jagni, and indeed in some parts of the district kutki (which being very quick to come to maturity is specially suited to a very light soil) is the only crop grown on it.

Soils in sandstone villages.

23. In the villages lying in the Tawa valley, where the soil known as 'thotar' is found, I have made an extra class of sihar and called it sihar II: in this class all that land has been included, which though it will grow and is frequently sown with tilli, is too poor for juar or gram.

Soils in Tawa Valley.

24. The soil classes of old fallow were recorded in the khasra for note at time of assessment, but as they were not required for statistical purposes they were omitted from the total of soil classes for the district. Consequently the figures which I give below show the areas under each soil in cultivated land only (*i. e.*, land under crop or current fallow):—

General remarks on soil classification.

Name of soil.				Area.	Percentage of total area.	Remarks.
				Acres.	Per cent.	
Kali II	...	...	...	6,650	1	
Morand I	...	...	...	68,126	8	
Do. II	...	...	...	157,716	18	
Mutabarra	...	...	..	152,326	18	
Sihar	...	...	...	72,195	8	Of this 17,310 lies in the Tawa valley and is divided as follows:— Sihar I—6,032 acres. Sihar II—11,278 "
Retari	...	...	...	67,431	8	
Bardi	...	...	..	330,985	39	
Kachhar	...	...	...	27	...	

It will be seen that this classification brings out all the differences of soil recognized by the cultivators, elaborates the distinctions drawn by them between the best classes of black soil, and clearly defines the somewhat-vaguely recognized differences between the four classes of poor soils.

Position classes.

25. The next step in the classification of soils was to make allowance for the advantages and disadvantages of position. One position, *viz.*, geunra, is common to all classes. This term is applied to land so situated that the drainage from the village site falls upon it. Unless the basti is a large one and the formation of the ground favourable, this area is small, 58 per cent. of it is occupied by makka-baris. Abpashi is another position term, meaning irrigated, which is applied to each of the main divisions which benefits by irrigation, *viz.*, wheat land, sugarcane and vegetable gardens. The rest of the positions are peculiar to wheat land and are as follows :—

Advantageous positions.

Dol	...	...	Situated so as to hold moisture longer than usual.
Bandhia or Bandhan	...	...	Embanked.

Disadvantageous positions.

Tagar	...	...	High-lying and sloping.
Bharkila...	...	...	Cut by nalas.
Kohli	...	...	Damaged by wild animals.

Land in the normal position was classed as mamuli. The damage inflicted on the rain crops by wild animals is in this district so nearly universal that it was thought better to make an all-round allowance for this in fixing the soil factors of this division, rather than to have a separate position class as in wheat land.

Results of soil classification.

26. I give below some figures taken from Table III of the general assessment statement at the end of this report, which will give some idea of the quality of the cultivated area of this district. Wheat land covers 29 per cent. of the area, of which 25 per cent. is on the good soils (kali II and morand I) and 75 per cent. on the inferior soils morand II; mutabarra and sihar; 75 per cent. of this land is in the ordinary or mamuli position, 2 per cent. is in advantageous and 19 per cent. is disadvantageous positions.

Sugarcane land, all of which is irrigated, covers 3 per cent. of the area. Other garden land (nearly all makka-bari) accounts for 2 per cent. more.

Sixty-six per cent. is under minor crop land, of which 28 per cent. is on the superior kharif soils, *viz.*, morand, mutabarra and sihar (including sihar I in the Tawa valley groups) and 72 per cent. on sihar II (in Tawa valley groups) bardi and retari.

Methods of cultivation.

27. The preparation of the soil for sowing rabi and kharif and the methods followed in the other ordinary operations of agriculture such as sowing, reaping and threshing are, I think, similar to those employed in other Satpura districts and the Nerbudda valley, but may be briefly stated here to make this account of the agriculture of the district more complete.

Bakharing rabi land.

28. The preparation of the soil for the cold weather crop should be begun in the hot weather by passing the bakhar or bullock hoe over the soil several times. The cultivators thoroughly understand the importance of thus letting the sun into the soil. But owing to various causes this operation is not infrequently omitted or imperfectly performed. If a tenant has a sugarcane garden and not more than two bullocks, he cannot spare a pair of bullocks from the well in the hot weather, and if he is to give his wheat land an adequate preparation at this time he must hire bullocks for the purpose: or he may have a marriage to perform, and the preparations for this together with the journey that may be involved and the ceremony itself occupy the time which he might otherwise devote to his land, and if in addition he has kharif land to prepare for sowing, he will have no time to attend to his rabi fields at this season. In the jungly villages, it is the custom for all except a few of the better class of tenants to spend the hot

in carrying timber for sale from the jungles to the large bazars of this or the Berars. They and their bullocks are engaged in this way until of the hot weather, when they have only just time to prepare their land which is always the most important part of the holding in a jungle

During the rains the plough (nagar or hoe) is brought into use and is or should be turned over two or three times at least. The black soils rabi is grown are so heavy during or immediately after rain, that bullocks talk or drag a plough in them until a break of a few days in the rains and the sun and wind to dry the land a little, so that the amount of labour which can be given during the rains depends very largely on the character of the rainfall. This difficulty is particularly operative in the narrow strips of wheat land which contain a great deal of the wheat land of the district and is least noticeable in the excellent villages immediately round Betul where the open nature of the country assists the rapid drying of the soil except in the small patches of kali. This soil in the villages round Betul is never touched with the plough except at sowing time, the bakhar being used instead during the rains. It is said that the land gives a better outturn under this treatment, but it is not probable that the true reason is that the soil being a kind of clay is so heavy that bullocks cannot drag a plough through it in the rains. If the land has received proper attention it should by the end of September be well broken up and free of weeds.

30. At the beginning of October, towards the end of that period of the rains known as the 'hathi-ka-pani,' the sowing begins. For sowing, the plough is provided with a hollow bamboo which is run through the pole and furnished with half a coconut or a small wooden bowl at the top. The seed is poured into this by a woman walking beside the ploughman and falls into the furrow behind the blade. Well-to-do cultivators with sufficient bullocks usually run a bakhar over the fields just in front of the sowing plough. In the south of the Multai Tahsil it is usual to sow with a 'titan.' This is a triple-seed drill of simple construction. It is merely a log provided with three iron spikes drawn by bullocks, the usual seed-bowl being fixed into the handle but having three bamboos instead of one leading from it to the ground, one for each of the shallow furrows made by the spikes. This implement is never used in other parts of the district, and is little known except in the Masod-Pattan country. It was introduced there from the Nagpur and Berar plain, where it is always used for sowing rabi. It is said by people of the other parts of this district who know of it, but do not use it, that it is suited only for good land free of stones, as the spikes are apt to break off against stones. I am inclined to doubt this, as it is used in some poor villages on the edge of the Masod-Pattan block of this district. Four bullocks are used to pull it, but even then, there is a saving of labour because three lines of seed are sown with 2 men, 1 woman or boy and 4 bullocks, while with the plough 3 men, 3 women or boys and 6 bullocks would be required. It is said also to save 25 per cent. of seed. No weeding is necessary and if the crop is not irrigated, nothing more remains to be done until it is ready for the reaping hook.

31. With a normal rainfall (*vide* paragraph 41), no irrigation is necessary, but if the winter rains fail, a couple of waterings will vastly improve the crop, will in fact make all the difference between a bumper and a poor crop. No wells are sunk exclusively for the irrigation of rabi crops, and there are no irrigation tanks, but sufficient water for 5 or 6 acres of rabi land can sometimes be spared from the sugarcane well, and there are in a good many villages small streams which can be temporarily dammed and utilized for this purpose. There are also numbers of wells which were originally sunk for sugarcane cultivation but have been abandoned because a sufficient supply of water was not found, and many of these hold enough water to irrigate a good many acres of rabi. The land record returns for the year 1896-97, in which the rains ceased in August, show only 5,616 acres of rabi crops irrigated and the average area is only about 4,000 acres. The irrigation of rabi land occupies a few days only and is often effected after the patwari has completed his annual field-to-field inspection, and it is probable that

some irrigation does not appear in the village papers, but from what myself seen during village inspection, I should say that a large area of which could be conveniently watered is left dry even in those years in event shows that irrigation would have been most beneficial.

Reasons why area of rabi crops irrigated is small.

32. In the case of land lying under wells which are used for sugarcane, this is no doubt often due to want of bullocks, since the watering of sized cane-garden needs all the labour of four bullocks; moreover, if the been short, the cultivator may be unwilling to risk the depletion of supply below the minimum required for his cane land. Then again be a deserted one not used for sugarcane, it would generally be necessary for the cultivator to spend Rs. 15 or Rs. 20 on the leather bucket and rope and wheel on which it hangs. The use of stream water involves little or no cost, but it is not so much resorted to as it might be. The principal risk I think, that there is always a great risk in the case of gram, masur and in the case of wheat a smaller risk, but still a real risk that irrigation may do more harm than good. The risk in the case of the pulses lies on the frequency of frost and cold mists (known as dhow) of which the injurious effect is heightened by the presence of much moisture in the soil and which are always liable to occur in valley bottoms. More frequently than not the pulses are damaged to some extent in one tract or another from these cold mists, and wheat often suffers in a less degree. In the case of wheat a further risk lies in the possibility that heavy winter rains may fall after the crop has been watered and the excess of moisture may result in a kind of black rust known as 'kani.' I have seen an otherwise splendid crop ruined in this way. But the disease is not often seen.

Reaping, threshing and winnowing of rabi grains.

33. The crop is reaped with the usual small reaping-hook known as darati or 'hassia' and is at once piled in the threshing-floor and threshed during the hot weather by bullocks which are tied in a line to a stake and driven round and round over the crop. It is then winnowed. The method followed is simple in the extreme. The cultivator waits for a good wind and then allows the crop to drop by basket-fuls from a high stage erected on the threshing-floor, when the wind blows the chaff to a little distance and allows the grain to drop at the foot of the stage. The grain is then ready for market.

Bakharig and ploughing of land for kharif sowing.

34. Land intended for a kharif crop should be broken up with the bakhar twice before the rains break, viz., once in Baisakh (15th April to 15th May) and once in Jeth, just before the break of the monsoon. It should then have two more bakharings and be sown immediately after the second. Owing to want of bullocks or other fortuitous causes, much of the land does not get more than one or two bakharings and is often sown while still full of weeds. The better classes of soil require a couple of ploughings also before sowing, but bardi and retari are often prepared with the bakhar only.

Clearing barras for cultivation.

35. The greater part of the kharif-growing soil is so poor that it requires long resting fallows after a few years cultivation. It is not usual to clear these lands completely when taking them up from waste. The small trees and bushes are cut down to the ground, but no attempt is made to dig up the roots and all mahua and harra trees are left standing so that after 3 or 4 years fallow the plot becomes covered with long grass and bushes and before bringing it under cultivation these have to be cut again. Barras that have been long under cultivation are of course much better cleared than new ones, but one rarely sees a large barra entirely free of bushes. It is considered best, when breaking up barras that have been lying fallow for several years, to give the land a full preparation, but allow it to remain unsown for one year; but this is not often done in practice. There is an oilseed called jagni which thrives in very imperfectly tilled land, and it is usual to put poor kharif land under this for one year after a long fallow.

Sowing, weeding and hoeing kharif

36. Most of the kharif crops are sown broadcast, but juari and kali-tilli are sown with the plough like rabi crops except that the hollow bamboo is fastened a couple of feet behind the tail of the plough so that the seed may lie less deep. All the kharif crops except two should be sown between 15th June

and the end of July : those two are jagni and the late kutki known as rasoyi-kutki : as weeds grow strongly during the rains, all the best kinds of early sown crop have to be weeded once or twice. The two late sown crops do not require it as fewer weeds start into fresh growth after they are sown. The crops commonly grown, which are habitually weeded, are juari, kodon, rice, urad and maize. Weeding is done by women with a reaping hook with which they dig out the weeds. Before weeding a juari crop, it is usual to run a bullock hoe (smaller than the bakhar) known as dowra through the field in order to loosen the weeds and break up the soil round the juari plants. The earliest crop is reaped in August and the latest in December.

37. The method of cultivation of maize is similar to that of other kharif crops except in the Gauli villages of the north of the district. The Gaulis 'lepe' their baris with cow-dung and sow the seed in it without ploughing. The cultivation of sugarcane is described in paragraphs 85 to 91. Cultivation of maize gardens and sugarcane.

38. Little use is made of manure, except in sugarcane cultivation. If used on rabi land it is always put down before the rains and much of it is washed away before the crop is sown. The cultivators consider that to put manure on rabi land after the rains induces damage by white-ants. As the manure they use is rarely well rotted, they are right in this. Most of the cattle droppings is used for fuel cakes except in the heart of the jungle where the cultivators do not take the trouble to use them as manure, and even if there is plenty of wood to supply the village itself with fuel, there is always a demand for the fuel cakes at the nearest large village in the open country. During the rains when fuel cakes cannot be made, many of the cattle of the open villages are away in the jungles. A good deal of manure is used in cane gardens, but it is often poor stuff, mostly rubbish and sweepings. As cattle are never bedded on straw, the whole of their urine is lost to the cultivator. Manure.

39. The value of green soiling is not unknown, but the operation is, I believe, only effected in sugarcane land and not often in it. Jagni and tilli are the plants most frequently used for the purpose. They are sown in the plot intended for cane and are ploughed in before they seed. The cost is very small. Green soiling.

40. There are rain-gauge stations at Badnur, Shahpur, Chicholi and Multai. The first-named is situated near the centre of the district, and as it lies in a small basin surrounded by low hills, which tend to keep storm clouds hanging about a good deal, the fall is heavier there than elsewhere in the district. Multai lies on the east in the middle of the bare trap plateau. The entire absence of forest in this part of the district no doubt accounts for the fact that the rainfall is smaller here than at either of the other three stations. The difference between the average of the driest and wettest station is however only about 5 inches. Rain-gauge stations.

41. The rainfall of the district may as usual in this country be divided conveniently over four seasons : the early and late monsoons, the cold weather rain, and the hot weather rain. The rainfall of the last period is of very little importance from the point of view of the cultivator, as only irrigated crops are then on the ground. A heavy fall in April or May may damage the crop, when on the threshing-floor, but this rarely occurs. The total quantity of the year's fall is of much less importance than the manner in which it is distributed. With 10 inches less than the average annual fall, we may have excellent crops provided we get the greater part of the rain just at the right time of the year and *vice versa* with an average total fall we may have wretched crops if the rain be unseasonable. The famine year following on the monsoon of 1896, furnishes an excellent example of this. In that year we had in Badnur and Chicholi a total fall less than 4 inches under the average of 25 years, but as there was no rain in September and October, and little in August, the kharif crops utterly failed, and much of the rabi land could not be sown. Although in numerous other years since 1874, the deficiency in total fall has been much larger than this, the crops have never been so hopelessly ruined. The ideal year for the cultivator would show about 40 inches of rain which would be distributed as follows. Rainfall necessary for good crops.

A heavy fall for a few days beginning about the 15th June, followed by a short break, which should be succeeded again by steady rainy weather until the middle of August, would provide for the successful sowing and germination of the early sown rain crops. A break of ten days at this time is of advantage to enable the cultivators to cut their bhadeli-kutki and sow jagni and rasoyi-kutki: also to weed their other kharif crops. Rainy weather with occasional short breaks of sunshine till the end of the first week of October, will then ensure the success of the rain crops and afford the necessary opportunities for preparing the black soil for rabi. It is desirable that there should be at least two or three very heavy downpours during the course of the monsoon, as they benefit sugarcane much more than continuous gentle rain, and the wells appear to fill better than with a steady fall of moderate intensity. A few showers at the end of October and beginning of November and about Christmas time will then furnish all the rain needed by the rabi.

Average rainfall.

42. It will be seen from the figures which I give below that as might be expected the average distribution of the rainfall corresponds very closely with that indicated above.

Average rainfall at each station for the past 24 years from 1875-76:—

	EARLY MONSOON.				LATE MONSOON.				COLD WEATHER.				HOT WEATHER.				Grand total.
	June.	July.	August.	Total.	September.	October.	November.	Total.	December.	January.	February.	Total.	March.	April.	May.	Total.	
Badnur	7.43	13.49	10.47	31.51	9.01	2.47	.43	12.29	.77	.40	.24	1.42	.34	.18	.43	.97	46.21
Multai	7.08	11.76	9.11	27.97	8.37	2.02	.62	11.03	.54	.53	.31	1.37	.38	.16	.40	.94	41.32
Shahpur	7.08	14.02	11.23	32.33	7.27	1.62	.45	9.45	.63	.67	.17	1.48	.24	.08	.22	.55	43.83
Chicholi	6.64	13.39	10.39	30.31	9.04	2.11	.35	11.51	.78	.40	.13	1.32	.62	.12	.45	1.00	44.16

Variations in rainfall.

43. But the fall is very variable. In four years out of the 24, it was at Badnur 9 or 10 inches in excess of the average and in two years 9 or 10 inches less. That is to say, in 25 per cent. of the years, it differed from the average by 20 to 22 per cent. The heaviest fall was 59.49 inches in 1876-77, and the lightest 33.78 in 1895-96.

Conditions of rainfall which affect crops adversely.

44. The most important causes of poor crops are—too early cessation of the rains; too heavy rain in late October, November and December; absence of rains in November and December; too continuous early and late monsoon rains. The first of these conditions is the most disastrous since it affects the most important of the kharif crops as well as the rabi. Fortunately it rarely occurs. In several years since 1875, the September rains have been very scanty, but in every year except 1895-96 and 1896-97, this has been compensated by a good fall in October. The second is more common and has been a contributory cause of rust in wheat in five or six years since 1875. It also damages juar and kodon to a less extent. The absence of rain in November and December is perhaps the most common cause in this district of the partial failure of rabi crops. But its effect is not nearly so serious as too early cessation of the south-west monsoon or excessive rain in these two months, and if the monsoon has been good and continued well into October, and the weather be cool and clear with abundant dew, the absence of cold weather rain may even be of small importance to rabi. But it appears to have an effect out of all proportion to its apparent importance on the supply of water in the wells. It generally happens that many sugarcane wells run dry at the end of the hot weather when there has been no rain in the preceding cold weather. Unless there are occasional breaks in the monsoon, the cultivators cannot plough their rabi lands and it sometimes happens, as in 1897-98, that the grain has to be sown in land full of weeds and grass.

HISTORY

of the case revealed that Banswara had made an unprovoked attack on a village which indisputably belonged to Pratapgarh and had supported its encroachment on the territory of that State by the production of false evidence¹. As a punishment for this act the Maharawal's full salute was not restored² till February, 1880.

Maharawal Lachhman Singh was a conservative ruler. Although he effected certain changes in the administrative machinery and established courts, opened³ school, hospital and post office in his State and prohibited slavery and took ameliorative steps during the famine of 1877, he resented, not without reason, the interference of the British political authorities in the administration of his country. As a result of mismanagement, disputes arose with the jagirdars of the State, the turbulent Bhils got out of hand, and the land revenue system became chaotic. In 1901, the Government of India placed the finances of the State under an Assistant to the Resident in Mewar and in 1902 practically all branches of the administration were placed under that officer's immediate control⁴. Among important events of the year 1904 may be mentioned the formation of a council, the introduction of British currency as the sole legal tender, and the commencement of settlement operations.

Maharawal Lachhman Singh died in 1905 and was succeeded by his son, Shambhu Singh at the age of 37 years. The Assistant Resident, however, continued to administer the State till 11th January, 1906 when Shambhu Singh was invested with ruling powers⁵.

Shambhu Singh, however, took little or no interest in the management of the State which was administered under the guidance of a Political Agent⁶. During the reign of Maharawal Shambhu Singh, a telegraph line was laid from Banswara to Namli and Dungarpur, the jail administration was reformed and a new jail building was constructed. Schools were opened in villages and a Public Works Department was organised.

It was during this period that a *sanyasi*, Govind Giri by name, set himself to introduce reforms of a religious nature among the Bhils.

1. Erskine, K.D., *op. cit.*, p. 165.

2. *ibid.*

3. Ojha, G. H., *The History of Rajputana, Vol. III, Part II—History of the Banswara State*, Ajmer (1937), pp. 178, 184, 187-188 and 200.

4. *ibid.*

5. Erskine, K.D., *op. cit.*, p. 166.

6. Aitchison, C. U., *op. cit.*, p. 447.

between each line of stones is lowered, and the lower raised by the action of the surface drainage, until eventually the field is converted into a series of level terraces. There are excellent examples at mauza Kati of the Multai Tahsil.

Clearing land of stones.

49. The collection of stones from the surface of the land is often effected in the course of terracing it. Apart from this its principal use lies, I think, in the fact that the land can be better prepared for the seed when free of stones. The operation has to be frequently repeated, if the land is to be kept clear, as the plough and bakhar soon bring other stones to the surface which take the place of those removed.

Draining water-logged land.

50. The fourth and last of the improvements named above is one that demands the expenditure of considerable sums of money, but promises an unusually large return. In the lowest parts of valleys and basins of wheat land, there is not infrequently a block of the best kind of soil, which owing to its position retains water so long that it is impossible to cultivate it and it becomes filled with 'moya' grass. Sometimes the area of this land is so small that it would not pay at the present prices of agricultural produce to drain it, but elsewhere an expenditure of Rs. 200 or Rs. 300 would place under cultivation 8 or 10 acres of the best wheat land and the investment would be a paying one. One of the best instances of this is to be found in mauza Basner Buzurg of the Betul Tahsil where the malguzars have brought under cultivation a large part of the former water-logged area of that village at an expenditure of more than Rs. 1,000 and are continuing their operations in the same direction.

Noxious weeds.

51. 'Kans' grass used to be little seen in this district and is not the scourge that it is in some other parts of the Provinces. I see it is more in evidence now than before the famine. Want of bullocks is resulting in care'ess cultivation of black soil in some villages, and the kans is showing itself here and there where it did not exist before. 'Moya' grass, known as 'Munj' elsewhere, is found along the banks of nalas and in wet places. It prevents cultivation where it exists, but unlike kans, is easily cleared. It is moreover of great use to the agriculturist as it makes a good string. The commonest weed in black soil is the wild balsam known as 'Tiwari.' This is an annual which comes up at the beginning of the rains, and even if not rooted up with the bakhar would be dead by the beginning of the cold weather. The two commonest grasses of the jungle known as 'Gondal' and 'Kusal' soon spread over the fallow barras, but are kept out of them without difficulty when under cultivation. The most noxious weed of this district is the 'Agia.' This is a small plant of insignificant appearance which comes up only in kodon and sugarcane crops. It is a great pest of the sugarcane cultivator and some remarks on the subject will be found in paragraph 88. It never appears in rabi crops and only in kodon amongst kharif crops. The derivation of the word is no doubt from 'ag' (fire) and the name means "the destroyer;" 'to burn' being often used by the cultivator as a synonym for to 'destroy.' It comes up in the rains and dies down as soon as they cease. When it gets into a field the crop quickly dries and is often rendered not worth cutting. The appearance of this plant is a sign that the land is exhausted and requires rest or manure. It does not appear in the sandy soils even when under kodon and sugarcane.

Animals which damage crops.

52. Wild animals are a source of great annoyance and loss to the cultivators of a large number of villages in the district. They may be divided for the present purpose into two classes: *viz.*, those which always retreat to the jungle in the day-time: and those which are content to lie up in a wooded nala or patch of waste covered with grass and bushes, if no better cover offers. In the first class, nilgai, cheetal and sambar are the most common, and in the second, pig antelope, gazelle, hare, monkeys, porcupines, hyenas and jackals

Damage by animals which retreat to the jungle during day-time.

53. As the range of animals of the first class is large, it is necessary to guard against their depredations. It is in the heavy jungle which deer are known to frequent, and in the black soil in a jungle village.

stakes. The cost of the fence and the wages of the watchmen of course cuts down the profits on the land, but if proper arrangements are made, I think the animals of the first class do little damage to rabi. It is more difficult to keep them out of kharif crops, because the area under kharif in jungle villages is always much larger and not so compact as that under rabi. Amongst rabi crops pissi wheat is least liable to damage, as the long spines protect the ear to some extent. Amongst kharif crops kodon suffers least, possibly owing to the fact that husk of the grain is very hard.

54. The second class of animals are not tied down to the near neighbourhood of jungles, and it is consequently more difficult to keep them out of the crops. With the exception of hyenas and jackals, which attack sugarcane only, pigs are the most widely distributed. It is said that they never cross the Ambhora river from the jungles which bound the central plateau in the south of the Multai Tahsil, and there are no doubt 100 or 150 villages between that river and the southern spurs of the line of hills that rises above the south bank of the Bel river in which pig are never seen, but elsewhere there is always the chance of a sounder taking up its quarters in a village during the rains. If this happens in fairly open country the cultivators turn out in force and drive the animals into a neighbouring village, whence they are passed on again. In the dry season, when there is less cover in open country, their range is much more restricted, but even then they are sometimes found in the ravines and wooded nalas of villages at a distance from heavy jungle. They are said to do more damage than any other animal, and this is no doubt true as they grub up the plant by the root and sometimes even make themselves a shelter in a juar or sugarcane crop by cutting down the tall stalks and piling them in a heap under which they creep. They are also more difficult to drive away than other animals. Antelope are found in all the open villages, though they are numerous only in the 54 open villages immediately round Betul, and in that part of the central plateau which lies in the Multai Tahsil, say about 250 villages in all. The villages in which they are most numerous grow more rabi than kharif. Gram and wheat are the principal rabi crops of the district. The tips of the young shoots of gram require nipping off to make the plant spread, and provided it be not rooted up it is little damaged before flowering by being grazed by antelopes. Wheat again is little damaged after it has come into ear, because the long hairy spines of the ear prick the mouth of the animal unpleasantly and so protect the crop to some extent. Still these animals no doubt do a good deal of damage, but that they are comparatively innocuous compared with pig is sufficiently shown by the attitude of the cultivators towards them. He is little excited by the presence of buck in his field, but let him find a pig in his crop and he will boil over with bad language at intervals for the rest of the day. Hyenas and jackals attack only maize and sugarcane and are referred to in greater detail in the paragraphs on the latter crop. The remaining animals mentioned are found everywhere except in the more open villages of the central plateau. In some localities hares are numerous though not often seen, and I think that they and other small animals, which are for the most part nocturnal in their habits and owing to their small size very difficult to keep out of the crops, do much more damage than one would believe. I have seen a fine crop of American maize almost entirely destroyed by squirrels, rats and jackals, in spite of the efforts of a watchman. The maize, being sweeter than the kinds usually grown, no doubt attracted more than its share of animals, but the state of the crop showed what these little animals can do where they are numerous.

55. Amongst birds, peacocks and parrots are the most annoying to the cultivator. The former never leave the near neighbourhood of cover, but in the morning and evening flocks of parrots are on the wing all over the fields. They are particularly noxious in juar and wheat, and may be seen biting off the ears of wheat in their flight and carrying them to the nearest big tree to eat. Juar is particularly liable to the attacks of birds of all sorts after it begins to ripen, and the watchman's shout and the crack of his sling are continually heard in the morning and evening in November and the beginning of December.

56. The question of cultivators' gun licenses is an important one in this district. The sanctioned maximum was only 400. But last cold weather the

Damage by other animals.

Damage by birds.

Cultivators' gun licenses.

Commissioner of the Division heard numerous complaints on the score of want of licenses and took up the matter. Acting under his instructions, I submitted proposals when in charge of the district in the hot weather for increasing the maximum number of licenses to 600, which have since been accepted. This would provide a sufficient number of guns to protect all land which is habitually liable to damage by wild animals, and more than this we cannot hope to do. To protect all crops from pig in jungly localities it would be necessary to have a gun in every field. I do not believe that this large increase in the number of licenses will seriously diminish the number of head of game in the district. The cultivator is generally a poor shot and always has a wretched gas pipe to shoot with, so that even when he gets a fair shot at an animal he often only succeeds in scaring it, and as much of his shooting is done in the dark, his chances of touching the game he shoots at are still more remote. From enquiries frequently made of licensees, I do not think he often shoots more than four or five animals in the year, of which nearly all are pig and gazelles. Occasionally a sambar or cheetal hind or nilgai falls to his gun, but no harm is done if these are thinned out a little. I am of course assuming that the district authorities can prevent men with cultivators' licenses using their guns as shikaris.

Allowance made for damage by wild animals in assessing.

57. Wheat land habitually liable to damage by wild animals of the first class is recorded as kohli and a very low rate falls on it. The area is small, as only land along the edge of the forest is affected. The loss inflicted by other animals being general all over the lands of a village has been taken into consideration in fixing the unit-rate, while as kharif crops all over the district are more or less liable to damage, this disadvantage has been taken into consideration in fixing the factors for minor crop land, which is nearly always under kharif.

Cost of watching crops.

58. In open villages the rabi crops are usually not watched for more than the last two months of their growth, and the wages of the watchman, generally paid in kind, represent a cash payment of about Rs. 5. If the cultivators have so large an area in one place, one watchman can guard quite 20 acres, and the cost falls at about 4 annas per acre. But the area in charge of one man would on the average not exceed half this. In open villages juari is the only kharif crop watched, and the cost per acre comes to a little less. In jungly villages the crops are watched nearly double as long, but as the wages are often paid in the cheaper kinds of grain, the cost is less than double as much as in the open villages. As a matter of fact, the cultivator, his family, and his farm-servants, 'barsalias' or 'jiratis,' can generally do all the watching required, and the average expenses on this account are small. Fencing is not used to any extent (except for sugarcane) in open villages. In jungly villages the tenants have the right to take fencing free from the village forest, and the cost is *nil*, as it is rarely necessary to employ special labour for setting up the fence.

Number of plough-cattle.

59. The table below shows the total number of plough-cattle in the years of attestation (1894-95 to 1896-97) in the malguzari villages of the district, and the average occupied and cropped area per pair of bullocks. The occupied and cropped areas taken are the average areas for the 4 years 1891-92 to 1894-95 :—

Number of plough-cattle.	Occupied area in acres per pair of plough-cattle.	Cropped area in acres per pair of plough-cattle.
84,119	25	16

An ordinary pair of bullocks will bakkar about 2 acres of land in a day and plough about 1 acre. It would appear at first that the number of bullocks is large enough to enable all the ploughing and bakkaring of the district to be efficiently done. But the demands of sugarcane cultivation have to be considered. Sugarcane ought to receive water once every four days from the end of September till the middle of June. In the cold weather no harm is done if the intervals of watering are longer, but even then the cane should never be more

than eight days without water. One 'mot' worked a'l day in a well of average depth (about 30 feet) by two pairs of strong bullocks will water about 1 acre of sugarcane per diem. If the well be deeper or the bullocks weak, or if only one pair of cattle be used, the cultivator will be able to water much less: in some instances I have found not more than one-sixth of an acre watered per diem from a deep well with one pair of poor bullocks. For the present purpose we may take it that on the average about 0.33 of an acre of sugarcane can be watered in a day by one pair of bullocks. Comparatively few sugarcane gardens exceed one acre in area. Cultivators of small gardens can make shift in the cold weather, though with difficulty, without extra bullocks for the well. But in the hot weather nearly all the labour of one pair of cattle would be required for the well, and if the cultivator is to water his cane crop, prepare his land for the next year's sowings, and thresh his rabi crop, he must have additional bullocks. In estimating the sufficiency of the stock of plough-cattle, we should then allow about one pair of bullocks for every acre of sugarcane land. The average area under cane in the 4 years named at the beginning of this paragraph was 8,168 acres. But owing to various causes, which will be referred to elsewhere, the present area is a good deal less, and it seems probable that for some years to come at least the area will not exceed 6,500 acres. We may therefore consider that 13,000 bullocks are required for the sugarcane wells, and this leaves 71,119 head of cattle for ploughing and bakkaring rabi, kharif and sugarcane lands. This gives 8 acres of rabi land plus 11 acres of kharif land, total 19 acres, to be actually put under crop every year with only one pair of bullocks. This is not more than the maximum which one pair of bullocks can manage, if they be strong and in good condition. But many of the cattle included in the total of 84,119 are in poor condition, and many are very small and light. Moreover, the estimate of the number of bullocks required for wells is the very lowest that could be made, since it takes no account of the fact that there are a very large number of sugarcane gardens between half an acre and an acre, for which one pair of bullocks would be required. Then again the well-to-do cultivators and malguzars have more than enough cattle for their bare needs calculated as above and are able to cultivate their land more highly, while the poorer sort have less than the minimum they require. All things considered, we may say that even if all bullocks existing in the years of attestation were evenly distributed over the district, there are not enough to give the land all the cultivation it requires, and as many cultivators have more than the minimum of cattle required, there are numerous tenants, especially in the poorer tracts, who have too few for their wants and cannot afford to give their land more than a very superficial preparation. The greater part of the district was attested before 1896-97, and the scarcity of fodder in that year, combined with the necessities of the people, which induced the Gonds to kill and eat a number of cattle, have reduced the number below that appearing in the attested misls: and the deficiency of cattle is greater than that which appears from the estimate made on attested figures. A couple of good harvests would place the district in as good a position in this respect as before the famine.

60. The principal sources of supply are the hilly sand-stone country in the north of the district, the Khamla plateau, and the Sohagpur Tahsil of the Hoshangabad District. The Gonds and Gaulis of the jungles in the north of the district often own very large herds of cattle and use the cows almost entirely for breeding. The bullocks bred are small, but hardy and active. The most numerous caste on the Khamla plateau are Gaulis, and cattle-breeding is their occupation. There is some Berari blood in their herds, and the cattle are larger than those of the north of the district. Their best animals are fine strong bullocks. Large numbers of the white and grey cattle known here as Malwa bullocks are brought up from the Sohagpur Tahsil of Hoshangabad and from across the Nerbudda. They are strong heavy animals and are largely used for well work and in the rabi cultivation of the best wheat villages. Their feet are said to be too soft for hard work with a plough in the stony lands of the poorer villages. Many of the malguzars and the well-to-do tenants also breed their own cattle, and in the south of the Multai Tahsil cultivators sometimes buy in the Berars. The grazing in the sandstone part of the district is poor; no cotton and little juari is grown, and it is doubtful whether it would pay to attempt to improve the breed of cattle there. The retari soil which covers the waste

Sources of supply
of cattle.

lands grows chiefly a small wiry grass known as 'barwasi' which contains little nourishment for cattle. But in the trap country there are large areas of waste in much of which there is a good water-supply; the 'gondal' grass which flourishes on the poor bardi soil and the stalks of juari which is largely grown afford excellent fodder for cattle, and I think it would pay some of the wealthier malguzars to make an attempt to improve the breed of their cattle with the object at first of supplying their own needs for the heavy well work, and ultimately the large demand in the Berars and Nerbudda valley.

Breeding.

61. Breeding is now carried on in a haphazard way that must tend to the continual deterioration of the stock. It is the custom not to castrate bulls till they are about 3 years old. At this stage they are known as 'gora' or 'naria' and are trained for the plough; they are then castrated and sold as plough-bullocks. These young bulls remain with the herd and begin to breed from about 2 years old, so that practically all the calves in the district are got by immature bulls, $3\frac{1}{2}$ being the earliest age at which a bull should be allowed to serve cows. The Gaulis on the Khamla plateau told me that they separated their young bulls from the cows and kept bulls specially for breeding: some of them perhaps do this, but I saw many mixed herds on the plateau just as elsewhere in the district. If they would reserve the best of their bulls for breeding purposes, and keep them uncastrated, it would not matter much whether the immature bulls ran with the herd or not, as the big bulls would no doubt keep them off the cows. But the Gaulis appear to be generally so greedy for immediate profit, and the private breeders so hard up for bullocks for the plough, that every bull is cut as soon as it reaches the proper age.

Cattle markets.

62. The only large cattle marts in the district are at Betul and Kherli, a village in the Multai Tahsil on the Bel River. Statistics of these sales are kept and show that the number sold at Betul and Kherli in 1894-95 (a normal year) was 800 and 700, respectively, and the average cost per head Rs. 12-0-0 and Rs. 17-8-0, respectively. The Khamla cattle are mostly sold at the annual fair held on the Bairam festival at Bairam on the border of this district and the Berars. At other weekly bazars a few head are sold, but these are the three principal cattle markets for the district.

Buffaloes.

63. Buffaloes are hardly ever used for agricultural purposes. There is no ploughing in water to be done as in the rice country, and their inability to work in the heat of the day makes them practically useless. They are sometimes used at well-shaded wells at mot work. They are terrible fighters and not infrequently injure themselves in this way. Cow-buffaloes are kept by some cultivators in the jungle tracts, where grazing and water-supply is good, and they add to their income by sale of ghi. The comparative value of bullocks and buffaloes for plough work is well illustrated by the fact that the price of a bullock is roughly double that of a cow, and the price of a bull-buffalo half that of a she-buffalo.

Conditions under which cattle are kept.

64. The working life of a bullock which is used for well work is said rarely to exceed 4 years. But those used chiefly for barra cultivation last for 7 or 8 years. In the poor jungle villages the cattle get no grain or oil-cake to eat. At threshing time they are allowed to eat as much as they like of the straw while they are trampling it (except in the case of juari heads), and in the hot weather, when the grazing is poor, the cultivator gives his working bullocks karbi (juari stalks) and chaff, if he has any. Under this treatment they become very poor at the end of the hot weather, especially in the better settled parts of the sandstone country, and do not improve for a month or more after the break of the rains. Indeed, the first effect of the juicy young grass of the rains appears to be to make them thinner yet, and is the cause of a good many deaths from various forms of bowel disease. As might be expected disease is always more rife at this time of the year than at any other. The Gaulis, who live by breeding cattle and have only an acre or two of cultivation, give their animals nothing but grass and leaves. It is a grievance with them that the grazing fee in Government jungles does not include the right to gather the leaves and seed pods of certain trees for their cattle. In the open villages non-working cattle are worse off and working bullocks better off than in the jungly villages, as there is less grazing and more

ny of the cattle are sent away from these villages to the
The well bullocks always get some grain (generally tiwra)
a good supply of chaff and cut grass. The cultivators often
acres of their land for grass, which they cut and stock for the use
plough and well cattle during the working season.

65. The commonest diseases are foot and mouth (khurri), rinderpest Disease.
(nata), anthrax in several forms, of which the two most often occurring are known
as 'ektangia' and 'pharwa,' the first affecting one of the fore legs and the second
the lungs. The people have recognized ways of treating these diseases, but
except one of the cures for foot and mouth disease, I believe they are of little
use, and depend mostly on the efficacy of vermilion and incantations. Anthrax
and rinderpest are of course both very deadly, but do not spread with the rapidity
one would expect, considering that the segregation of diseased animals is never
practised. I believe that both these diseases are endemic in the district, and this
may account for their diminished virulence. Of late the people have begun to
bury the bodies of cattle which die from rinderpest and anthrax, in spite of the
protestations of the Chamars and Kotwals. They fully understand the advantage
of segregation, but the practical difficulties are no doubt great, especially in the
fully occupied villages, where the area available for grazing is small.

66. In paragraph 3 of his report Mr. Ramsay remarks that he found the Inaccuracy of
statistics of cropping,
&c., in misls of 30-
years' settlement.
khasras and village maps inaccurate when he came to the district in 1862, but
after testing and amending them, he considered that they were sufficiently correct
for purposes of assessment. But that this did not imply any great degree of
accuracy in the jungle tracts at least, is clear from his subsequent remarks in
paragraph 336, in which he says, in connection with the demarcation of Govern-
ment waste: "In many cases the measurements are so faulty, and frequently
the figures in the khasra bear so little affinity to the numbers as traced upon the
map, that little reliance can be placed upon the mere figures." The Chief Com-
missioner's orders on the report also show that the khasras and measurement of
Betul were supposed to have been less accurate than those in the other districts
of the Central Provinces. An examination of the papers shows that the mistakes
which occurred were generally, as might be expected, due to the anxiety of the
amins and patwaris to save themselves trouble. Thus pieces of unculturable waste
between holdings which were not claimed by the cultivators, and were never in
their possession, were frequently included in the map and in the khasras in one
or other of the adjoining holdings, so as to save additional labour in survey: or
small patches of poor soil occurring in the middle of blocks of good land, or *vice
versa*, were overlooked and the whole area placed in one class; or in entering up
the crops, the standard crop of the class of land (e.g. wheat in black soil, juar
or kodon in bardi, &c.) was frequently entered instead of the crop actually sown
in the particular year in question. The total cropped area had also, I think, been
much overstated, especially the rabi area. Rabi is now grown on all land which
is good enough to grow it, and yet the area in the attested papers is 99,778 acres
smaller than that shown in the Settlement papers of 1864. Considering that so
much of the cultivation in the poor jungle-covered villages was at that time on
the 'dahia' system, we should expect to find the area of new fallow proportionately
smaller than at present. But from what I saw of the papers at the time of
village inspection, I should say that a part of the current fallow area of settlement
was entered as under crop at settlement, since even in poor villages occupied by
tenants of the agricultural castes, who did not practise 'dahia,' the area of new
fallow, which, judging by the area of bardi, should have been large, is quite
insignificant.

67. The statistics of cultivation, cropping and soils as entered in the Extension of cu-
ltivation since settl-
ment.
settlement misls are therefore of little use for purposes of comparison with those
of the present day. The figures in Tables IV and V at the end of this report do
not represent the normal condition of the agriculture of the district at present,
because in the years 1895-96 and 1896-97, during which more than two-thirds of the
villages in the district were attested, the early cessation of the monsoon threw
much of the rabi land out of cultivation, and want of rabi seed in 1896-97 induced
some cultivators to place black soil under kharif crop. So that Table IV gives a

kharif area larger and a rabi area smaller than the average, more than the normal proportion of fallow of three years or less. the average cropped, fallow and occupied areas for the years 1891 with those of the year of settlement, 1864. In three of these years were unusually heavy and the rabi area is therefore rather larger than the figures are nearer to the normal than those in Tables IV and V :—

Description of area.	AREA IN ACRES.		PERCENTAGE OF AREA TO VILLAGE AREA.	
	At Settlement.	Average of 4 years 1891-92 to 1894-95.	At Settlement.	Average years 1891-1894-95.
			Per cent.	Per cent.
Rabi area	373,765	273,987	23	
Kharif area	267,784	395,565	16	
Total cropped area	641,549	669,352	39	
Double-cropped area	Nil.	11,376	Nil.	
Net cropped area	641,549	658,176	39	
New fallow area	55,145	293,755	3	
Old fallow area	90,066	92,048	6	
Total occupied area	786,760	1,043,979	48	

The inaccuracy of the settlement figures is obvious. The increase occupied area, which amounts to 257,219 acres or 33 per cent., has taken place almost entirely on poor soil, which requires more frequent fallows than the average land which was under cultivation at settlement, and a good deal of it is the result of the prohibition of 'dahia' cultivation. We should therefore expect to find a smaller proportionate increase in the cropped area, but still something more than the 5 per cent. increase which is shown by the figures. Owing to the frequent entry in settlement papers of 1864 of current fallow as cropped land, it will be more useful to compare the cultivated area (net cropped area plus current fallow) than cropped areas. The increase in this area is 38 per cent.

Estimate of future increase in cultivation.

68. In the open parts of the Multai Tahsil, *i. e.*, in four-fifths of the malguz area of the tahsil, and in the Betul group comprising 54 villages, the lands are fully occupied and were very nearly so at settlement. But in the jungly there is a large area (592,734 acres) still waste, much of which (101,987 having been formerly under 'dahia' cultivation, is free of forest growth, and will the increase of population be brought under the plough again. Very little of land is fit to grow anything better than jagn and the minor millets, kodon kutki, with frequent fallows. In estimating the probable rate of future increase cultivation, it must be remembered that a large part of the increase which taken place in the last 30 years is due to the abolition of dahia; the settled cultivation now followed in its place necessitates the continued occupation of land while resting, whereas in the old days worn-out land was at once abandoned did not appear as occupied in the settlement misls of 1864. The full the famine of 1896-97 on the occupied area has not yet been reflected patwari's returns. The majority of the tenants whose holdings have lying waste since that year went away without explicitly relinquishing their others though unable to cultivate refuse to relinquish their right. In these the patwari could not strike off the names of the tenants till the expiry of years. The returns for the coming year should show the full extent to which occupied area has diminished as the result of the famine. The figures for current year show a decrease of 4 per cent. only in this area, but the area is 19 per cent. below the normal. It is probable that the actual the occupied area has been not less than 6 per cent., and it will take the some time to make up this deficit, and longer still to show any advance normal area of the present day. It is therefore not impossible

GENERAL

OTHER MINERALS—Alongwith mica, veins of beryl have been reported around Kherwa and Ghatol villages. Near the Sarita village small deposits of asbestos and near Kiwas village, those of calcite have been detected whereas near Ghatol village, copper ore has also been reported.

Earthquakes and earth tremors¹

The district lies within the seismic zone of slight to moderate intensity. According to earthquakes zoning map², the district lies in zone II. In the past, the district experienced the fringe effects of the great earthquakes originating in the Rann of Kutch and the Great Himalayan fault zone. The details of the earthquakes, experienced at Banswara with varying intensities are as under :

S.No.	Date	Location	Description
1.	1819, June 16	Rann of Kutch	A great damaging earthquake was experienced at Banswara with maximum intensity of VI M.M. ³
2.	1905, April 4	Kangra	A great shock near Kangra was felt at Banswara also.
3.	1910, April 9	Near Mt. Abu	A few shocks originating near Mt. Abu, were reportedly felt at Mt. Abu, Jodhpur, Pachpadra and Deesa. Banswara was within the zone of perceptibility.

1. Source : Office of the Director General of Observatories, New Delhi.
2. "Recommendation for the earthquake Resistant Design of structures", published in the Indian Standards Institutions' Publications.
3. Modified Mercalli Intensity (scale of 1931) of VI specification: Felt by all; many frightened and ran out-doors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.

is very little sown, the climate being too cold for this delicate crop. rabi crops are field peas and coriander, which are grown in small plots wheat and gram: kusam or kardu grown for the oil which the seed yields not for the dye from the flowers as elsewhere. It is often sown along of roads and paths, as its prickly leaves keep cattle out of the crop. is grown in mutabarra mutafarikat, being sown in September. An improved variety of this plant is always sown in lines across cane gardens. It grows with extraordinary rapidity into a handsome shrub 12 feet high. Tilli is grown chiefly in the sihar of the Tawa valley groups and to a less extent in the Bho group, and (b) in bardi and mutabarra in the extreme south of the district. It is not a crop of much importance. Only the black and white tillis, which are grown as rain crops, are ordinarily sown. In 1897-98 for want of rain a large area of wheat land in the north of the district was placed under maghai tilli, which is grown as a cold-weather crop, but it was severely injured by the cold of November and December and showed itself to be unsuitable for the district. The black tilli is grown in the south of the district only; else the white, of which there are two sowings, one in June and one in August. Nearly all the juar is grown on high-lying bardi and mutabarra in the north which gives but a small outturn. The want of rabi seed has in the last 3 years induced cultivators to put some rabi land under this crop, but of good soil under the crop is now decreasing again. Kodon, kutki are the standard crops on the poorest soils, and kodon and jagn are grown a good deal in mutabarra. The early or bhadeli kutki is sometimes grown as a catch-crop before wheat or other rabi. Other khari crops are urad, tur, san, sanwa, rala, kangni, mandgi (all minor millets), rice &c. Urad is sown either in a mixture with juar and tur or separately. When sown separately it is generally put down in rabi land, which is afterwards sown with wheat or gram. Tur is never grown separately. It ripens very early and is consequently exposed to the cold of December and January, which kills it. Sanwa is an early sown crop which is sometimes put down in the first week of the year which is afterwards sown with rabi. Kangni is always sown in the first week of the year, it is, I think, the least valuable of any of these minor millets. Rala is a variety of kangni grown only in manured land, vacant sugarcane baris: it gives a large outturn. Mandgi covers a very small area. It is valuable as being the only field crop grown in the district of which the seedlings are transplanted like rice in some parts of India. It gives a much larger outturn than any other of the minor millets, but is little grown because of its being eaten. Rice is chiefly grown as a catch-crop before rabi in small patches which hold sufficient moisture to support the crop without embankment. It is grown only in the few villages along the base of the hills on the north and in half a dozen villages under the Udim Sagar hill in the south of the Tahsil stretching from Pattan to Masod. The climate of this district is not suitable to the growth of this crop, the temperature being rarely high enough in October to admit of the bolls forming properly. Some attempt have lately been made to grow the Egyptian long-stapled varieties as a rabi crop. The plant thrives, but so far a good quality of cotton has not been produced. This crop can be made to succeed it would be of the greatest value as it would afford a valuable crop for which there is an unlimited demand. It could take the place of sugarcane on land requiring a change of crops. San hemp is grown more or less all over the district, but mostly in the villages between Nimpani and Chicholi, where there are a number of small villages. They make the hemp up into 'gunny' cloth for sacks. Hindus do not grow this crop, but employ Gonds to do it. The reason is said to be in the fact that it describes how a cultivator one day ordered his wife to bring up the field which he was sowing with 'san' before half the field should be sown. The seed germinated so quickly that the woman was late, where she was killed her. 'San' germinates in an incredibly short time, in one day.

tation of crops.

71. In the black soil known as morand or kali wheat is sown at shorter intervals replaced by gram, masur or tiwara; these are more frequently sown in the poorer and less frequently in the better soil. There is no recognized system of rotation except in the case

to the growth of sugarcane. Juar has since the famine been much sown in black soil usually placed under wheat or other rabi, but in ordinary times juar is seldom sown in rotation with rabi. When this is done it is generally in light wheat soil which is being much damaged by erosion. In sihar gram and juari are sometimes sown in alternate years. The cultivator is aware that this improves the juari crops taken off the land. The only other soil in which cultivators recognize that there is one system of rotation which is better than another is bardi. It is generally considered that in this soil the order of cropping after a fallow should be jagni, kodon or juar, kodon or juar, kutki and then fallow again. Kodon or juar will not succeed if the soil be getting exhausted, nor if it be imperfectly tilled. Jagni on the contrary flourishes in soil full of clods and roots, and kutki will grow in land which is too light or too exhausted for any other crop. Jagni is therefore sown first, kutki last, and the other two crops in the intermediate years. But this arrangement is by no means always adopted. Sometimes only three crops are taken off the land between fallows, sometimes owing to want of any particular kind of seed or other fortuitous cause the cultivator is unable to sow the crop he would prefer. Bardi is kept under fallow for periods varying from 3 to 5 years. The same crops are grown in mutabarra as in bardi. But the intervals between the fallows are much longer; some of the best mutabarra is indeed never left fallow.

72. To the information already given it will be well to add estimates of the outturn of the principal crops, together with some more detailed information regarding particular crops. The produce estimates will be based on the results of crop cuttings made by members of the Settlement Department from 1894-95 till 1898-99. I exclude experiments made by the District Staff, because in the case of crops which were cut before the land was classed by the Settlement Department, the officer experimenting had nothing to guide him as to the class of the soil on which he cut the crop, and the experiments made by these officers after attestation were few. The results of the analysis will no doubt generally agree with the table of normal outturns issued in 1898 by the Director of Land Records and Agriculture, but as the results of experiments made in the last three years were not included in his calculations, it seems worth while to consider the question of outturns in detail. It is unfortunate that the rainfall of every year since and including 1894-95 has been more or less abnormal. In 1894-95 heavy rain at the end of October and in November, combined with cloudy weather a little later in the year, induced a bad attack of rust in wheat. In 1895-96 the rains ceased entirely in the middle of September and the rabi and all kharif crops except bhadeli-kutki were badly damaged. The next year was of similar character, but yet more unfavourable owing to the still earlier cessation of the rains. All rain crops except the small area of juar on good soil and the early kutki were absolutely ruined, and the rabi was only saved from a similar fate by a good fall of rain in December. In 1897-98 the kharif was a bumper crop, but rabi was poor owing to the absence of breaks in the monsoon and the failure of the cold-weather rain. The kharif crop of the current year was on the whole normal, but rabi has again suffered from frosts and the absence of winter rains. The average given by the results of experiments made in such abnormal years will clearly not represent normal outturns. But by considering the anna or per cent. estimates of normal outturns represented by the crop of the year as reported by the Deputy Commissioner, I shall endeavour to deduce a useful estimate of produce from these experiments.

Produce estimates.

73. White pissi is the wheat most largely grown. At settlement red wheats covered a larger area than at present. The natives consider that they make better flour than white pissi, but since the European demand has become of importance the latter has largely ousted red wheats. It is also claimed for pissi that it gives a better crop on light soils and is to some extent protected from wild animals by its beard, which is longer and stronger than that of lall haura or ekdania, the common red wheats. I have already referred to the diseases to which wheat is subject, *viz.*, 'gerua' or red rust and 'kani' or black rust. Whiteants always attack the crop more or less. In normal years the damage caused by them is small, but if the rainfall be defective, they diminish the outturn materially, especially in sihar. The extent to which a crop has been damaged by these pests is easily discernible about a month ~~before~~ the crop ripens.

Wheat.

The plants of which the roots have been destroyed by the ants are then almost white, and it looks at first sight as though the crop were ripening very unevenly. But close inspection reveals the fact that the affected plants have no roots left and are really dead. The crows appear to be aware that a field which shows many of these whitened plants will yield them a good meal of white ants. A caterpillar occasionally attacks the crop; and frost accompanied with a cold wind about the time it is in flower sometimes, as in this year, causes much loss.

Outturn of unirrigated and unmanured wheat.

74. Wheat is grown in kali II, morand I, morand II, mutabarra and sihar. But for the present purpose we need take no account of the crop on the first and last named soils as there is very little kali in the districts, and there is little sihar good enough to grow wheat. There are 159 experiments on the other three soils in the mamuli or normal position. The results are tabulated below :—

Class of soil.	1894-95.		1895-96.		1896-97.		1897-98.		1898-99.	
	Number of experiments.	Average outturn per acre.	Number of experiments.	Average outturn per acre.	Number of experiments.	Average outturn per acre.	Number of experiments.	Average outturn per acre.	Number of experiments.	Average outturn per acre.
Morand I mamuli ...	10	360	26	590	12	500	13	550	2	410
Morand II do. ...	32	280	18	320	12	500	9	480	1	300
Mutabarra do. ...	13	360	6	410	2	410	...	...	...	...
All-round average, combining outturns in the proportion of the area under the three soils concerned.	55	310	50	410	26	490	22	500	3	330

In 1894-95 heavy rain at the end of October and beginning of November combined with cloudy weather in December induced a bad attack of rust in the wheat. In 1895-96 and 1896-97 the rains ceased in September and August respectively with disastrous results, which were, however, mitigated in the latter year in parts of the district by a good fall of rain in December. In 1897-98 continuous rain prevented the preparation of the land, and much of the seed was sown in land full of weeds and this with the failure of the winter rains prevented the reaping of a normal crop. This year the want of winter rains and frost and cold winds in December did much damage. The peculiar conditions of the season gave unusual results as in 1894-95, when the light high-lying mutabarra produced a larger outturn than morand II owing to the fact that the highest lands were free of rust. Then again in 1895-96 the highest lands, which are habitually early sown, were the only soils in which wheat germinated properly, so that mutabarra again shows an abnormally large outturn compared with the other soils. The district estimates of outturn in these years were as below :—

1894-95	...	...	11 annas in the rupee.
1895-96	...	...	8 " "
1896-97	...	...	10 " "
1897-98	...	...	75 per cent. of normal.
1898-99	...	...	75 " "

It is peculiarly difficult to estimate the outturn of a crop smitten with 'gerua'. The ear often looks fairly large and full, and the crop may be thick and strong, but if the ear be carefully examined it is seen that the grain presents the condition, known as 'jhiri,' i. e., it is shrivelled up and very light. So that there is always a tendency to over-estimate the outturn of a rusted crop, and there is no doubt that this was the case in 1894-95, when the outturn was estimated at 11 annas, 13 annas being a normal crop. The experiments in the current year are too few to form a basis for an estimate. If the average or normal outturn be calculated from the actual averages obtained in 1895-96, 1896-97 and 1897-98 on the basis of the District Officer's estimate of outturn, we get the following as the normal outturns :—

1895-96	...	...	666 lbs. per acre.
1896-97	...	...	637 "
1897-98	...	...	666 "

The figures for the last year do not include any mutabarra outturns, so that the all-round normal outturn would be a good deal below 666 lbs. in that year. The standard on unirrigated and unmanured land now assumed for the district is 620 lbs., and these figures afford no justification for any departure from the accepted estimate.

75. The table which I give below shows the outturns obtained in several experiments made in land which was either irrigated and manured, or irrigated without manure, or manured without irrigation. Under the head of manured, I include land which has been habitually manured every third or fourth year for sugarcane, but was not especially manured for the crop of wheat. The figures for experiments on this kind of manured land are shown separately :—

Year.	SANTABARI LAND IRRIGATED.						OTHER MANURED LAND NOT IRRIGATED.						IRRIGATED BUT NOT MANURED.				IRRIGATED AND MANURED.			
	KALI II.		MORAND I.		MORAND II.		KALI II.		MORAND I.		MORAND II.		MORAND I.		MORAND II.		MORAND I.		MORAND II.	
	Number of experiments.	Out-turn.	Number of experiments.	Out-turn.	Number of experiments.	Out-turn.	Number of experiments.	Out-turn.	Number of experiments.	Out-turn.	Number of experiments.	Out-turn.	Number of experiments.	Out-turn.	Number of experiments.	Out-turn.	Number of experiments.	Out-turn.	Number of experiments.	Out-turn.
1894-95	...	...	3	495	4	495	...	...	1	410	1	285	...	...	...	...	...	1	300	...
1895-96	2	950	...	...	2	685	...	...	4	850	1	885	...	...	...	...	...	1	650	...
1896-97	1	1,100	5	970	1	410	1	760	3	680	...	...	...	...	...	1	1,350	...	...	...
1897-98	...	...	...	...	3	700	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1898-99	...	...	...	...	...	...	...	...	1	960	...	...	...	...	...	...	...	...	...	...

Outturn of manured and irrigated wheat.

The outturns in all four divisions of the table are small in 1894-95, because rust is always specially virulent in manured or irrigated land. Excluding the experiments made in this year, we have an average of 888 lbs. per acre in 21 experiments on manured and irrigated land on all soils. Differences of soil are of less importance in manured and irrigated land than in unmanured dry land, and we may therefore disregard the class of soil for the present purpose. All but 4 of these 21 experiments were made in the years 1896-97 and 1897-98, when the monsoon ceased very early: and although irrigation obviates to a great extent the evil effects of want of rain, the hot dry months from October to March of those years must have had some effect on the outturn of even irrigated land. I see no reason therefore to think that the normal outturn of irrigated and manured wheat land is less than 1,000 lbs. per acre, which is the standard estimated by the Director of Agriculture.

76. I have explained in paragraph 70 the probable reason why gram is not much grown here. It is sown either (a) in black wheat soil as a mixture with wheat or in rotation with wheat and other rabi crops, (b) on minor crop land in rotation with juar, (c) on low-lying sihar mutafarikat after a crop of sanwa or bhade'i-kutki. Some idea of the comparative importance of the area falling in each of these classes may be formed from the figures for the Betul and Dhaba groups of the Betul Tahsil, the former of which contains little but good black soil and the latter is sandy. Out of a total rabi area of 29,500 acres in the Betul group gram was sown as a sole crop on 668 acres only and as a mixture with wheat on 3,000 acres only. In the Dhaba group out of a total rabi area of 11,900 acres gram covers 3,832 acres, wheat-gram 1,538 acres. The area falling under classes (b) and (c) is variable because it cannot be sown without good October rains. In 1894-95 the year in which the Dhaba and Betul groups were inspected, the late rains were exceptionally favourable for sowing gram on light soil such as sihar and mutabarra, and the area was consequently larger than usual in the Dhaba group. But the small extent to which gram was sown in the Betul group (the best in the district) in that year, is evidence of the fact that the greater part of the gram in this district is grown on inferior soils. When the area is larger than usual it may safely be assumed that the whole of the excess over normal area is on poor soils—sihar and mutabarra. Frost and cloudy weather which causes the flowers to shrivel up before they are fertilized, and sometimes brings a plague of caterpillars called 'Illi,' are the worst enemies of this crop. There are few experiments available. Sixteen on sihar mutafarikat in 1894-95 give an average of 530 lbs. per acre, and 4 experiments in the same year on morand II mamuli give an average of 385 lbs. The heavy rains in this year, which were exceptionally favourable for the crop on sihar, were unfavourable to gram on black soil. In 1895-96 the following experiments were made: the abnormal conditions of the year render them of little use:—

MORAND I TAGAR.		MORAND II SUGAR- CANE LAND.		MORAND II MINOR CROP LAND.		SIHAR MAMULI.		SIHAR, SUGARCANE LAND.	
Number of experi- ments.	Average outturn.	Number of experi- ments.	Average outturn.	Number of experi- ments.	Average outturn.	Number of experi- ments.	Average outturn.	Number of experi- ments.	Average outturn.
2	430	1	380	1	130	1	240	3	230

One experiment on morand I mamuli in 1897-98 gives 900 lbs. The standard adopted for the district by the Director of Agriculture is 500 lbs. I think the information afforded by the figures above shows that this is rather too high an estimate. The sihar crop of 1894-95 was a bumper one and that of 1895-96 very poor. I take it the average does not exceed 400 lbs. on this soil and on morand II and mutabarra mutafarikat. Probably the average on morand I and morand II gohari is at least 650 lbs. and 500 lbs. per acre respectively. But little of the crop is grown on morand I and probably not more than half of total on morand I and morand II together. I think a figure half way between the average indicated for morand II gohari and sihar mutafarikat would be nearer the mark, say 450 lbs. per acre.

77. There are no experiments in tiura and masur, which are the only remaining rabi crops of any importance. Tiura is used in ordinary times solely for cattle. A good deal of the grain is exported to the Berars for the same purpose. It causes paralysis if eaten by human beings, and is bad for cattle even in the rains. One not infrequently comes across men who were paralyzed by eating this grain at the time of the Madras famine, when prices of other grains were very high. Tiura is the first rabi food-grain to be sown and is often cut in the first week of January. It thus escapes a good deal of the cold weather and mists which are liable to damage the other pulses. It is grown only on a good black soil in rotation with wheat and other rabi. Cultivators estimate the outturn as a quarter more than wheat, and as it is grown on similar soil to that which grows wheat, the average outturn would, on this basis, be about 775 lbs. per acre. I have already said that except in a few jungli villages of the Tapti valley, masur is largely sown in this district on light soil on the margin between wheat and minor crop lands. There are no useful experiments available for this district. The standard adopted by the Director of Land Records and Agriculture is 640 lbs., on the assumption that this crop is grown on the best soils only. This is the case in the plains but not here. Cultivators say that the outturn of this crop is about one-eighth more than that of wheat on similar soils. This would make the average for this district about 450, and I think this is a safer estimate.

Tiura and Masur.

78. This crop is ordinarily very little grown on land fit to grow wheat. The difficulty experienced by cultivators in obtaining sufficient rabi seed and the very small quantity of juari seed which falls to the acre have continued to induce them to put a good deal of rabi land under this crop. It should be mentioned, however, that in 30 or 40 villages along the southern border where the climatic conditions are similar to those in the Berar and Nagpur plain, the whole of the good black land is either under juari or cotton. But the area sown on this land forms a very small proportion of the total area under the crop, and under normal conditions almost the whole of the crop in the district is on mutabarra mutafarikat and on bardi mutafarikat. It is little sown in the sandstone villages, and then only on small patches of low-lying sihar beside nalas, generally in rotation with gram. There are many different varieties of the plant, and in the south of the Multai Tahsil, where the cultivators have connection with those of Berar, half a dozen kinds are seen. But elsewhere only two are commonly sown, *viz.*, the common white kind known as 'thotar' and the red called 'argud' or 'mohra.' When grown in bardi and mutabarra this crop does not thrive unless the rainfall is up to the average for the district. It is particularly necessary that the 'hathi-ka-pani' or rabi sowing rains should be good; if these are light or fail altogether the heads will be very light. In this soil it makes very little growth till the beginning of September, but then with good rains shoots up very rapidly. If sown in good black soil, heavy or continuous rains stunt the plants and produce a poor crop. The absence of 'hathi-ka-pani' affects the crops little in these lands. This characteristic of juari was very well brought out by the condition of 1895-96 and 1896-97 and 1897-98. In the former two years of very short rainfall the black soil juari gave an average crop while much of that on bardi never seeded at all. In 1897-98 the heavy and continuous rains prevented proper germination of the crop in black soil, stunted it, and in fact almost killed many plants, so that the outturn was much below normal. But there was a bumper crop on bardi and mutabarra. The crop is liable to attack by a grub and a fungoid growth to which I have referred in more detail in paragraph 88. I give below an abstract of juar experiments on mutabarra and bardi mutafarikat:—

Juar.

Year.	MUTABARRA MUTAFARIKAT.		BARDI MUTAFARIKAT.	
	Number of experiments.	Average out-turn.	Number of experiments.	Average out-turn.
1894-95	...	...	4	280
1895-96	...	370	8	410
1898-99	...	...	17	540

The year 1894-95 was not a particularly unfavourable one for juar on bardi, and the crop of 1898-99 was an average one. It appears then that the experiments made are of little use, and it must be admitted that they do not afford a satisfactory basis for an estimate of average outturn. The explanation of this is that an interval of 6 days elapsed between the cutting and weighing of all the crops cut in 1894-95, while in 1895-96 the longest interval between reaping and weighing was two days and several of the crops were weighed as soon as reaped, and in 1898-99 the crops were all weighed within a few hours of reaping. Rabi grains contain much less moisture than kharif when ripe, and it makes little difference whether they are weighed at once or left for a few days; but the rain crops lose much in weight in the first few days after reaping. There is also another reason why juar should not be weighed at once, *viz.*, that it is rarely possible to leave the crop standing so long that all the grains in the heads shall be ripe, and those which are not quite ripe adhere so closely to the small covering husk that it is difficult to get the crop quite clean unless it be allowed to dry thoroughly. Juari when ripe is so badly damaged by birds that the cultivator likes to cut it as soon as possible, and it pays him to cut it in this state better than to leave it till every grain is ready to drop from the husk. The standard adopted by the Director of Land Records and Agriculture is 450 lbs. I doubt whether the average outturn of grain fit for the market exceeds 300 lbs. on bardi mutafarikat or 400 lbs. on mutabarra mutafarikat: and making allowance for the very heavy crops on good black soil, I think the all-round average outturn per acre probably does not exceed 375 lbs.

Kodon.

79. This crop is grown chiefly on bardi and mutabarra mutafarikat. It is sown also in the sandstone villages, but to a smaller extent. A good deal of the retari is too poor to grow kodon. It is the staple food of the Gonds and is generally consumed in the form of a broth called 'pej.' In this form it is so nourishing that half a pail of the grain will suffice a working man for a day. I abstract below the results of experiments in this crop:—

Year.	MUTABARRA MUTAFARIKAT.		BARDI MUTAFARIKAT.		SIHAR MUTAFARIKAT.		RETARI MUTAFARIKAT.	
	Number of experiments.	Average outturn.	Number of experiments.	Average outturn.	Number of experiments.	Average outturn.	Number of experiments.	Average outturn.
1894-95	1	550	4	550	9	560	21	620
1895-96	...	...	3	470	...	...	...	...
1896-97	1	390	2	430	2	330	28	280

Here again the length of the interval elapsing between reaping and weighing seems to have more effect on the outturns than differences of soil or conditions of rainfall. All the crops of 1896-97 were weighed on the same day as they were cut, and so, although owing to the failure of the monsoon in August the crop was not more than one-fourth of the normal, the outturn given by the experiments is more than half as large as that of 1894-95, when the heavy rainfall was favourable to the crop, but the interval allowed to elapse between cutting and weighing was rarely less than three days. The standard adopted by the Director of Land Records is 450 lbs. per acre. The experiments made in 1894-95 were completed before I came to the district, and before the staff had been trained in soil classification. It was found afterwards that a good deal of the sandy soil classed during the first month or two had been wrongly recorded, retari being classed as sihar and *vice versa*. Subsequent experience showed that kodon is generally grown in sihar and not retari in sandy villages, and I have little doubt that most of the experiments shown under head retari mutafarikat in that year were really on sihar. The heavy rains of 1894-95 gave a full crop and on the figures for that year a normal crop on bardi would be about 450. The retari

produce would be less and that on mutabarra and sihar more, but these cancel out against one another and 450 lbs. to the acre is probably a fair estimate of the average for the district.

80. Kutki is sown twice and the early crop known as bhadeli-kutki is sown at the end of June and reaped at the beginning of August, *i. e.*, in the Hindu month Bhadon, from which it takes its name. From the middle to the end of August the second crop known as rasoyi-kutki is sown. Both crops are exactly similar in all respects. Bhadeli covers a smaller area than rasoyi. It is generally sown by the cultivator for his own use, to supply himself with food from August till October, when he reaps the more important kharif crops. As I have already mentioned it is sometimes sown as a catch-crop before rabi in good black land. The results of experiments are shown below :—

Year.	SIHAR MUTAFARIKAT.		RETARI MUTAFARIKAT.		BARDI MUTAFARIKAT.	
	Number of experiments.	Average outturn.	Number of experiments.	Average outturn.	Number of experiments.	Average outturn.
1894-95 ...	6	370	22	320	3	390
1895-96 ...	1	480	1	650	2	390
1896-97 ...	1	360	2	60	1	260

The only large series is that on retari mutafarikat in 1894-95. In that year kutki—a weaker crop than kodon—suffered somewhat from the heavy rains in October and November, which laid it and rotted it to some extent. The experiments in 1895-96 on retari and sihar and one of those on bardī were of bhadeli, which gave a full crop. This crop being cut in the rains is very difficult to dry. The outturn of kutki is probably about 400 lbs. to the acre. It does not yield so much as kodon partly because it is more largely grown on retari, and partly because the ears are never so large and full as those of kodon.

81. I need say no more about jagni than I have already said. The experiments give the results tabulated below :—

Year.	MUTABARRA MUTAFARIKAT.		SIHAR MUTAFARIKAT.		RETARI MUTAFARIKAT.		BARDI MUTAFARIKAT.	
	Number of experiments.	Average outturn.	Number of experiments.	Average outturn.	Number of experiments.	Average outturn.	Number of experiments.	Average outturn.
1894-95 ...	3	150	4	175	2	97	6	145
1895-96 ...	7	85	...	...	...	...	4	137
1896-97 ...	...	...	...	...	...	...	5	116

The experiments in 1894-95 are of special value, as the crop was a normal one and in every case the grain was kept for from 5 to 14 days before being

weighed. In the other two years the crops were weighed as soon as cut. Little jagni is grown on retari. I think the all-round normal outturn per acre is about 150 lbs.

Tilli.

82. About this crop also I need say no more in this place. The crop is of less importance than jagni and very few experiments have been made. Four on bardi mutafarikat in 1894-95 give an average of 190 lbs. per acre, and one experiment in that year on bardi mutafarikat geunra gave 420 lbs. The crop in that year was not above the average, and one of the four crops cut on bardi mutafarikat had been damaged by frosty mists and gave only 130 lbs. to the acre. Two experiments on retari mutafarikat in 1896-97 gave 160 and 80 lbs. per acre. The sihar II, which grows a good deal of tilli in the north of the district, probably yields rather less than the bardi near head-quarters, on which the four experiments of 1894-95 were made, and the bardi and mutabarra of the south of the district yields heavier crops. I take it that the all-round average is about 200 lbs. per acre.

Cultivation
of sugarcane.

83. Though this crop covers a small area—average of 4 years from 1891-92 till 1894-95 is 8,168 acres—it is of great importance in this district owing to the fact that the produce is valuable and that a large number of cultivators grow it in small plots. The field in which the crop is grown is divided into several plots not less than three and rarely more than four in number, and the sugarcane is grown on each plot in turn. It is always irrigated: generally from a well, but occasionally from a hole beside a river bed known as a 'bhurka.' I have seen the cane on every soil in the district. The comparative merits of the different soils as cane-producers will be discussed further on. As a good deal of skill and capital is expended on the cultivation of this crop, I will give some description of the methods followed in cultivating the cane and making the gur, before considering the results of crop experiments with a view to estimating the average output. Before the rains, manure is laid down in the plot selected, and during the rains and the first months of the cold weather, it is ploughed backwards and forwards until a sufficiently fine tilth has been obtained. If the cultivator has been unable to give the land all the cultivation it requires, he sometimes breaks up the clods with a kodali or the back of an axe before sowing. At the end of December or beginning of January, the field is divided into numerous small plots with the main irrigation channels between them and the smaller ones across them. The furrows are made by using a plough with a triangular board fastened above and at the back of the share. The seed, which consists of small pieces of cane containing each three or four eyes, is then sown. The sower lays them in the water channels (both large and small) which have been previously well watered, and as he drops each piece of seed, puts his foot on it, so as to partially bury it. As soon as the plot is sown a watering is given and the crop is then left without water for 15 days. If the cultivator have any well-rotted manure, he now spreads it on the surface of the land. The crop is then fenced. This fence should be made of thorny bushes beaten into a flat mass and placed between a double line of stakes fixed in the ground. The dead leaves which were stripped off the last year's canes before they were put through the mill are then stuffed into the crevices and a very stiff hedge 6 feet high is the result. But very often the cultivator cannot afford such an elaborate affair as this, and merely runs up a rough hedge of tinsa or lendia boughs which will keep out cattle but not jackals. A large part of the materials of the fence are used for more than one year. At the end of the fifteen days, the cane must be regularly watered. During the cold weather no part of the crop should be without water longer than eight days, and as the weather gets warmer the intervals of watering should not exceed four days. By the beginning of the rains the crop ought to be 3 to 4 feet high. During the monsoon there is nothing to be done but keep down the weeds, and as the canes begin to swell and sweeten, to keep off wild animals and bind the canes together so that they may not be broken by the wind or cracked by the heat of the sun. At the end of September, even before the rains have well ceased, watering must begin again. Great importance is attached to proper irrigation at this time, and it is considered unsafe to trust to the heavy showers which usually fall at the end of the rains. In the middle of December the harvest begins. The first 'baris' to be cut are those intended to be used for seed. The cutting and manufacture of gur continues into March.

84. In some villages of the Multai Tahsil lying on the central trap plateau, the sub-soil water is very near the surface and there are wells in which the hot-weather level of the water is not more than 8 or 10 feet below the surface. But the average hot-weather level of well-water in that part of the district is about 20 to 30 feet. Elsewhere the water is generally deeper and wells of 50 to 60 feet are not uncommon. In the deep black soil of the 54 open villages round Betul and the few villages lying in the basins of excellent land round Atner and Bhaisdehi in the south of the Betul Tahsil, as well as in the sandy villages on the north bank of the Bel, the depth of the soft soil makes it necessary to shore the well tube with brick. But in that part of the district where sugarcane is most largely grown, namely, the undulating trap plateau, the formation is such that durable wells can be made without the use of brick and lime. The sugarcane gardens are found in valleys, many of which are very narrow. The soil in the centre is fairly deep, but it becomes continually shallower as it approaches the hills on each side. As a rule there is not more than 8 or 9 feet of soil in the deepest parts, and at the foot of the surrounding slopes the bed rock or muram is scarcely covered. In such land it is usual to shore with unshaped stones from the hill side only so much of the shaft as passes through the black soil on the surface. The underlying muram or rock requires no support. The length of time for which a well of this kind will last depends principally on the nature of this substratum, known locally as 'nio.' A projecting ledge of the muram or rock is left in the shaft at the point where the black soil meets it, and the stones which support the walls of the upper part of the well tube rest thereon. If the material be not hard enough, the constant dripping of the water from the 'mot' wears it away, and in 4 or 5 years the cultivator has to spend a few rupees in strengthening the threatened portion of the wall. In some wells the underlying rock is so hard that the wells require no attention for many years. Wells are now very rarely shored with timber, though judging from Mr. Ramsay's report such wells were common at settlement. The cost of digging a well depends on so many contingencies that it is difficult to estimate an average, but the maximum and minimum expenditure which is incurred in wells of the different classes and the circumstances which affect the cost may be stated. A durable bricked well in soft deep soil cannot be made for less than Rs. 100 and if the water be very deep and the shaft fall in once or twice before it can be supported with its brick tubings, the expenditure may amount to Rs. 400 or Rs. 500. The stone shored wells of the Multai Tahsil can be made for Rs. 15 or Rs. 20 if the water be not more than 12 or 15 feet below the surface, and the underlying rock or muram be not excessively hard. I think the most expensive of these wells never cost more than Rs. 200. To pierce moderately hard rock the cultivators light a fire of cow-dung cakes on the rock, and when it is very hot, pour water on it, so that it cracks in all directions and is then broken up with crowbars. If it will not yield to this treatment, it is blasted with gunpowder. The earth and debris removed from the shaft is used to form an inclined plane called 'dhao,' on which the bullocks walk. This serves a double purpose. It lightens the labour of the cattle and enables the cultivator to raise the water to a level much higher than the mouth of the well, thus enabling him to irrigate a larger area. Sometimes if it is desired to irrigate land lying at a considerably higher level than the well, the cultivator makes a hole (known as bhurka) at the highest level to which he can carry water from the well, and he fills the bhurka from the well and then with the help of another 'dhao' raises the water to a level several feet higher than the mouth of the bhurka. By this duplex arrangement the water is sometimes raised as much as 20 feet above the level of the mouth of the well. Some marks on the subject of sugarcane wells will be found in Part II of this report the paragraphs regarding the exemption of improvements from assessment. Experiments show that one man working with two pairs of bullocks and one 'mot' or leather bucket can raise about 66 tons of water in a working day of 10 hours from a well 30 to 35 feet deep.

85. The very best gur is made from sugarcane raised in soil that has never before borne the crop or been manured. As the land becomes more and more saturated with the properties of the dung and refuse which is put on it year after year, the quality of the gur gradually deteriorates till it reaches the normal. The same cause in an exaggerated form accounts for the fact that the gur made

from sugarcane grown on the geunra land or watered from a well lying in the geunra area is of such poor quality and fetches such a low price that it pays the cultivator better to sell it for seed. Consequently all geunra cane gardens are 'bij' or seed baris. They of course require less manure than other gardens, but are less profitable except in large villages, where there is a good demand for vegetables. In such villages the land is kept almost continually under vegetables or cane, and the gardens are among the most profitable in the district. Sometimes if a man be too poor to afford to buy seed from a geunra bari he will put down the flags from his own canes, but it is considered that this never produces a good crop.

The manufacture
of gur.

86. When the crop is to be turned into gur in order to avoid the fermentation that would set in if the cane were cut, it is dug up with a sharp pick. The leaves are peeled off by women and the stripped cane is then taken to the mill. Until 10 years ago the only mill known in the district was a cumbrous wooden structure, consisting of two heavy wooden cylinders set upright in a frame. One of the cylinders (known as the male) was turned by four bullocks, and the canes after being cut into small pieces were inserted between this and the fixed cylinder (known as the female) and crushed, the juice falling into a vessel below. But some 10 years ago, an iron mill invented by Messrs. Mylne and Thompson of the Bihia Estate in Bihar was introduced; it rapidly became very popular and there are now some hundreds in the district. A cheap and less efficient imitation of this mill has been lately introduced from Delhi, and owing to its smaller cost is I think likely to displace the Bihia Mill. Still, even this machine is infinitely superior to the old wooden rollers. There are now some hundreds of iron mills in the district and every village which grows cane has one or two. The advantages of the iron mill over the wooden one are—

- (a) it is more easily kept clean and therefore produces a larger quantity and a better quality of juice;
- (b) the cane need not be cut into small pieces before being passed through the mill, and thus a great deal of fermentation is saved;
- (c) the juice is extracted more quickly, as one pressing suffices against two or three with the old mill;
- (d) the workmen used frequently to get their fingers squeezed between the old wooden rollers, but this cannot happen with the iron mill;
- (e) the old mill made a noise which could be heard at a distance of a couple of miles, whereas the iron mill is almost silent.

Those cultivators who have no mill hire it from those who have, at Re. 1 per diem. The cultivators do not yet take full advantage of the iron mill. They still sink it in a pit just as they used to do with the wooden mill, and this necessitates the burying of the receiving vessel in the ground, so that it cannot be easily cleaned. The old mill was so tall that it was necessary to put it in a pit, but the iron machine being much lower, could be worked on the level and the receiving pan could be easily removed and kept thoroughly clean, thus avoiding some loss due to fermentation. As the juice is extracted, it is poured into the evaporating pan. This is a large iron pan, from 6 to 10 inches deep and from 6 to 8 feet in diameter, placed over a furnace. When evaporation is complete (usually in 6 hours) the juice is ladled out and poured into a wooden trough sunk in the ground. After it has cooled and hardened, it is humped up in cloths to drain and in a couple of days is ready for the market. The neighbourhood of a sugarcane garden presents a very busy scene at boiling time. The work goes on without intermission night and day. If the workmen knocked off at night the furnace would get cold and the expenditure on account of fuel would increase. The juice is fairly clean when it leaves the evaporating pan, as all dirt rises in a scum to the surface during the boiling and is removed with basket work ladles. But when lying in the wooden trough it picks up much dust and small bits of rubbish, which must lower its value in the market. The quality of the gur is determined by the colour. The paler the crystals are the better price it will fetch, and the redder they are the less valuable is the gur. If the weather

be dull and muggy when the gur is being made, it is never of good quality. Sugar is never made, but occasionally the cultivator will keep a little 'rab' (half boiled juice) such as is used in the manufacture of sugar, and keep it till it crystalizes into a substance like sugarcandy.. In those parts of the Multai Tahsil which are some distance from jungle, the refuse of the canes is used as fuel; elsewhere it is eaten by cattle or thrown on the land as manure.

87. Four varieties of the cane are grown :—

Varieties of sugar-cane.

- (a) The English or white cane. This is known as the English cane, because it was introduced 40 years ago from Otaheite by Colonel Sleeman. This cane yields a larger percentage of juice than any other grown in the district and was at first eagerly taken up by cultivators. But it was soon found that there were drawbacks to its cultivation. In the first place the delicate nature of the outer covering of the cane and its extreme sweetness render it particularly liable to suffer from the attacks of wild animals. Then again, owing to the thinness of this outer husk, the cane cracks and the juice ferments, if it be left standing after February, and this is of course a very serious consideration for any cultivator who cannot command a mill and evaporating pan just when he pleases. Lastly, and most important, it was found to be particularly liable in black soil to the attack of the rust known as "narkia" (*vide* paragraph 88) so that the plant is most largely grown in the sandy villages north of the Bel river, elsewhere only in a mixture with other kinds which are sown round the edge of the garden to protect the English cane.
- (b) The pachrang, so called because it is variegated in shades of red and yellow, is the cane most generally grown.
- (c) The sarari, a very thin cane almost valueless for gur, is sown round the edge of pachrang or English cane gardens as a protection against wild animals, which do not cure much for this hard and scarcely sweet variety.
- (d) The kala : this is a deep red cane, very thick and strong, but producing a smaller percentage of juice than the pachrang. It is little grown.

88. Jackals are exceedingly fond of the cane, and it is of course very difficult to keep such small animals out of the garden. If they cannot creep through the fence they will scramble over it. Pig also do a good deal of damage in villages that are within 3 or 4 miles of the jungle or large wooded nalas. It is very difficult to turn a big boar out of the cane : fireworks and guns are sometimes let off without any effect, and these animals lie up in the cane for several days. Hyenas are common in the neighbourhood of some of the best sugarcane villages and are just as fond of the cane as the jackals. It is said that they will ruin in one night as much cane as would make a khandi (560 lbs.) of gur. Bears used to be a great nuisance to the sugarcane cultivation in some of the more jungly localities, but have been driven back into the jungle and now rarely venture so far afield.

Damage to cane by wild animals and diseases.

The aghia plant referred to in paragraph 51 is the most serious of the pests which attack the cane. It is a sign that the land is exhausted and requires a long rest before being placed under cane again. When it first appears in a field it does little damage, but becomes more noxious every year. White ants, known locally as 'udai' (or the destroyers), are a great nuisance in sandy soils, especially if the crop be insufficiently watered. There is a grub called 'murer' which appears at the base of the canes in the hot weather, causing them to shrivel up and die. The cultivators place boughs of the 'akowa' or 'madar' plant, with salt and tamarind seeds in the water channels, and claim that it is an efficient remedy. Fresh shoots spring up in the rains in place of those destroyed by the grub, but they are of course inferior to those which have had the whole year to grow in. The grub appears most widely in years in which owing to

short monsoon rains or the absence of winter showers the water in the wells is barely sufficient at the end of the hot weather. The 'narkia' is a kind of rust which attacks the cane during the rains, turning it yellow and affecting the quantity and quality of the juice. In January of this year a pamphlet was received describing the Barbadoes fungoid disease, which has now been observed by experts in Madras and the North-Western Provinces. I have not had an opportunity of comparing 'narkia' with the description of the symptoms of the Barbadoes disease: but from what I have seen of 'narkia' in former years, I have little doubt that it is identical with the disease which has done so much harm in the West Indies. The 'murer' is no doubt the borer referred to in Dr. Watt's Agricultural Ledger No. 13 on the subject of the fungoid disease in cane. Two points which are of interest in this connection occur to me. One is that the disease has probably been prevented from attaining serious proportions in Betul by the substitution of pachrang for English cane in black soil gardens, in which the latter is particularly liable to the disease. The other point is that a grub exactly similar in appearance to the 'murer' of the sugarcane and known by the same name is found in juari and is always accompanied by a similar reddening of the fibres and rind of the plant as in the case of sugarcane attacked by 'narkia.' In the worst cases this is accompanied by a curious condition of the ear of grain the whole head of juar being covered with a soft black dust which gives it the appearance of a ball of soot. Can this be the same fungoid disease in one of the advanced stages described in Ledger No. 13. This rusted condition of the juari is known as 'kani.' Although a few rusted heads may be seen in almost every field, a crop is rarely seriously damaged from this cause. Specimens of this year's crop of juari and sugarcane will be submitted to the Settlement Commissioner.

Variations in area
under sugarcane
since settlement.

89. Mr. Ramsay's report does not state explicitly whether the area recorded as under sugarcane in the village records is the area actually under that crop in the year 1864, or the total area capable of growing the cane. Enquiries in the field, as well as the fact that the area shown as under the crop corresponds with the irrigable area, show however, that in all probability the area shown in the Settlement records is the area of land capable of growing the crop. I should have no hesitation at all in taking this view of the figures were it not that Mr. Ramsay in his paragraph 153 mentions that the area under sugarcane is 7,000 acres. This statement is not, however, of much value as the area given does not correspond with the total of the district according to the Settlement records. I take it then that the area shown under this crop is really that capable of growing the crop, and to obtain the area actually under cane in the year 1864, we should divide it by $3\frac{1}{2}$ (the crop being usually grown in 3 or 4 year shifts). The area of 1864 is then 2,915 acres. I have not got figures for the years between 1864 and 1885-86, but the area in that year and subsequent years to date has been as follows:—

			Acres.
1885-86	...	...	7,250
1886-87	...	...	7,604
1887-88	...	...	8,069
1888-89	...	...	7,836
1889-90	...	...	7,986
1890-91	...	...	7,734
1891-92	...	...	9,272
1892-93	...	...	10,446
1893-94	...	...	6,949
1894-95	...	...	6,712
1895-96	...	...	6,552
1896-97	...	...	6,094
1897-98	...	...	5,193

In drawing inferences from these figures it must be remembered that the crop areas are not determined by actual survey. In one large rabi field we may find as many as 6 or 7 different crops. The patwari knows the actual area of the field and estimates the areas under the various crops sown in it either by the eye or at most by stepping or measuring with a bamboo average length and breadth. He checks this estimate with the area given by a consideration of the seed sown. In the case of crops which cover a considerable area the total area for the district is nearly correct, but the smaller the area under the crop the more likely the total is to be inaccurate. Moreover, owing to the fact that the different kinds of sugarcane fall at a very different rate per acre (pachrang 25,000 pieces of cane, angrezi 15,000), and that two kinds are often sown together, the check afforded by the cultivators' statement as to seed is less useful than in the case of most other crops. To inaccuracies of this sort I would refer the sudden increase in the area in 1891-92 and 1892-93. In paragraph 106 I have shown that there was a fairly steady rise in the price of gur, from Rs. 20 per khandi in 1864 to Rs. 60 per khandi in 1870 and 1871, and thereafter a fairly steady fall to Rs. 35 or Rs. 40 per khandi. The variations in the area under the crop are referable to this fluctuation in the price of gur. I take it that the rise in price which continued till 1870 and 1871 was due to the same causes which contributed to the general rise in the prices of agricultural produce of the district at that time, *viz.*, the improvement of communications and the increase in the export trade to Europe. The extension of the cultivation of the cane was a natural consequence of the rise in the price of gur. When the Great Indian Peninsula Railway was linked up with the East Indian system, Betul gur had to compete with the canal and tank irrigated produce of Upper India and Bengal. I believe that Rs. 28-0 per acre is an average water rate in canal irrigated land, and no bullocks or bullock-driver are required to apply the water to the crop. In Betul the labour of at the very least one pair of bullocks and one man is required to bring the water on the lands, and there is in addition the cost of the well: so that a water rate of about Rs. 50 per acre is paid. Prices were bound to fall under the strain of this competition, and but for the fact that better gur and more of it per acre is produced in Betul, the cultivation of the crop must have died out. There are several circumstances which have operated to prevent the area from falling so low as that on which the crop was grown before the rise in prices began. First and most important is the prohibition of opium cultivation in 1878. The area under opium in this district was considerable at that time: and when the cultivation was prohibited, these cultivators whose opium wells contained sufficient water (only a small proportion of the whole) used them for sugarcane cultivation, since even with the falling prices it paid them better to use the water than abandon wells on which they had expended capital. Secondly, when gur was fetching Rs. 50 and Rs. 60 per khandi in 1870-71, a number of Kunbis and members of other castes, which generally leave garden cultivation to the more industrious and skilful Mali or Bhoir, sank wells and grew the cane. They, like the opium growers, have preferred to continue sowing the crop rather than to abandon their wells. But the profits are no longer large enough to tempt them to sink new wells. Consequently when a well falls in or 'aghia' appears in a bari, these men abandon the cultivation of cane instead of expending more capital. Aghia usually appears in a bari in black soil in 15 or 20 years, and many baris which were made in 1870-71 have arrived at this stage and been abandoned in the last 4 or 5 years. The short rainfall of the years 1895-96 and 1896-97 and the absence of winter rains in the two following years has contributed to reduce the area under this crop more rapidly than would otherwise have been the case, but I doubt whether any material recovery will take place so long as the produce has to compete with the more cheaply produced gur of Upper India and Bengal. The last retarding circumstance which I need refer to is the excellent quality of the gur produced in this district. So marked is its superiority over the article imported from other parts of India that it sells even in Betul at higher prices. The best gur produced in the district fetches as much as 30 per cent. more than the average article imported from other parts of India.

I have said nothing as to the effect of the importation of cheap sugar from beyond the seas on the cultivation of the sugarcane, because I believe that

before prices of the canal and tank irrigated product were affected by the importation of the cheaper article from abroad, they were still so low as to drive prices in Betul below figures at which the maximum area could be maintained under the crop.

The outturn of sugarcane.

90. The experiments in sugarcane are as follows:—

Weight of canes ... 34 experiments.

Weight of gur ... 20 experiments.

Number of pieces of seed per acre produced in seed garden. ... 25 experiments.

Proportion of weight of canes to weight of gur ascertained ... 13 experiments.

The results of these experiments are tabulated below:—

I.—Weight of canes per acre (in lbs.) in gur baris.

Year.	KALI II.		MORAND I.		MORAND II.		MUTABARRA.		SIHAR.		RETARI.	
	No. of experiments.	Weight of canes per acre.	No. of experiments.	Weight of canes per acre.	No. of experiments.	Weight of canes per acre.	No. of experiments.	Weight of canes per acre.	No. of experiments.	Weight of canes per acre.	No. of experiments.	Weight of canes per acre.
1894-95	1	46,080	3	51,160	1	53,960	4	45,650	2	51,250	1	11,180
1895-96	...	...	4	45,720	3	40,920	2	40,880	...	...	...	...
1896-97	...	...	...	...	1	58,800	1	45,720	10	35,520	2	36,800
Average of 3 years.	1	46,080	7	48,051	5	47,104	7	44,297	12	38,142	3	24,260

II.—Weight of gur per acre in gur baris.

Year.	KALI II.		MORAND I.		MORAND II.		MUTABARRA.		SIHAR.		RETARI.	
	No. of experiments.	Weight of gur.	No. of experiments.	Weight of gur.	No. of experiments.	Weight of gur.	No. of experiments.	Weight of gur.	No. of experiments.	Weight of gur.	No. of experiments.	Weight of gur.
1894-95	1	5,360	3	5,360	2	2,805	1	3,240	4	2,890	...	...
1895-96	...	...	3	4,920	1	3,760	...	...	...	...	...	...
1896-97	...	...	...	...	...	...	...	...	5	4,000	...	...
Average of 3 years.	1	5,360	6	5,140	3	3,123	1	3,240	9	3,507	...	...

The crop cut in 1895-96 was sown in December 1894 or January 1895 and that cut in 1896-97 in December 1895 or January 1896. So that both of these crops were exposed to the evil effects of the short monsoon of 1895-96. They did not of course suffer to the same extent as unirrigated crops, but the outturns were nevertheless short of the normal, and an estimate based on the results of experiments made in those years without allowance for the effect of the early cessation of the rains will be a very moderate one. Experiments in pachrang cane largely predominate, and this is as it should be, since this is the cane most largely grown. The average proportion of weight of canes to gur may be taken to be 9 to 1 in the case of all crops grown on kali II and morand I and sihar. On mutabarra the proportion is commonly said to be greater, and the one experiment available corroborates the statements of cultivators in this particular. Probably the proportion in retari is much the same as that in mutabarra. Morand II is probably midway between sihar and mutabarra in this respect. Calculating the weight of gur from weight of canes as given by the experiments in the first table on the basis of a 9 to 1 proportion in the case of all soils except morand II, mutabarra and retari, and in the proportion of 13 to 1 in the case of the two last named soils, and in the proportion of 11 to 1 on morand II, we get the following average outturns of gur per acre, which are compared below with the averages obtained by experiments in gur :—

		Kali II.	Morand I.	Morand II.	Mutabarra.	Sihar.	Retari.
Deducted from cane experiments	...	5,120	5,339	4,282	3,407	4,238	1,856
Average of gur experiments	...	5,360	5,140	3,123	3,240	3,507	...
Mean	...	5,240	5,240	3,700	3,375	3,870	1,866

I take it that a very safe estimate of the outturn would be :—

Kali II	...	...	} 5,000 lbs.
Morand I	...	...	
Morand II	...	...	} 3,500 lbs.
Sihar	...	...	
Mutabarra	...	...	3,000 „
Retari	...	...	1,500 „

Our soil classification shows the area of sugarcane land under each class of soil, and if these outturns be combined in the same proportion as the soils the all-round average for the district will be obtained. The average obtained in this way is 3,984 lbs. per acre, or say 4,000 lbs. per acre. The present standard is only 3,500 lbs., but I think, considering the majority of these experiments were made in two very unfavourable years, a standard of 4,000 lbs. is fully justified. The experiments included in the third table are too few to afford a good basis for an estimate of the produce of seed gardens. The majority of them also were made in a very summary way, *viz.*, by counting the canes in one-fortieth of an acre and estimating the average number of pieces of seed which would be yielded per cane. Probably the produce rarely exceeds 150,000 of seed even in the best bars, and the average would be nearer 100,000.

Outturns of other
kharif crops.

91. An area of 92,626 acres is normally under other kharif crops than those dealt with above. A small part of this area is under rice and urad, but by far the largest part grows kangli sanwa, mandgi and other minor millets with an outturn of about 400 lbs. per acre.

92. Applying the average outturns estimated above to the normal areas under the crops concerned (paragraph 72) I get the total outturns shown below :— Total normal out-turn for the district.

Crop.	Area.	Average outturn per acre.	Total outturn in maunds.	Remarks.
	Acres.	lbs.		
Wheat and its mixtures ...	195,206	620	1,318,295	
Gram ...	40,355	450	220,385	
Masur ...	28,144	450	153,699	
Teura ...	18,618	775	175,109	
Juar and juar-tur ...	68,280	375	310,740	
Kodon and kutki ...	146,265	425	754,279	I take the mean between average outturns of kodon and kutki.
Jagni ...	61,331	150	111,646	
Tilli ...	18,895	200	45,862	
Sugarcane ...	8,168	4,000	396,505	
Other rabi crops ...	11,664	400	56,621	
Other kharif crops...	92,626	400	449,640	Mostly minor millets giving about the same outturns as kutki.

Total food-grains about $34\frac{1}{2}$ lakhs maunds, oilseeds $1\frac{1}{2}$ lakh maunds, and gur about 4 lakhs maunds.

93. The quantity of seed which falls to an acre varies a good deal according to the quality of the soil, the time of sowing, and the means of the cultivator, but is much more constant in the case of rabi than in the case of kharif grains. I show below for the principal crops the usual quantity of seed sown per acre expressed both in the measure in common use in the district and in lbs. The equivalent in lbs. has been ascertained by careful weighment of each kind of grain in July :— The quantity of seed which falls to an acre.

Crop.	Quantity of seed in country measure.	Quantity of seed in pounds per acre.
Wheat ...	4 to 5 kuros.	77'12 to 96'40
Gram ...	3 to 4 do.	56'40 to 75'20
Masur ...	3 to 4 do.	60'72 to 80'96
Teura ...	3 to 4 do.	60'96 to 81'28
Juar ...	2 to 4 pailis.	4'50 to 9'00
Kodon ...	About 1 kuro.	About 19'60
Kutki ...	About 2 kuros.	About 38'56
Jagni ...	1 to 2 pailis.	1'92 to 3'84
Tilli ...	1 to 2 do.	1'91 to 3'82

94. The net produce available for consumption or export is shown below, I have assumed an average of 4 kuros of seed per acre for 'other rabi crops' and $1\frac{1}{2}$ kuros for other kharif crops with a weight respectively of 76'80 lbs. and Net produce.

28·80 lbs. and in the case of other crops have taken the means of the maxima and minima shown in the table of seed in the last paragraph :—

Crop.	Gross produce in maunds.	Seed in maunds.	Net produce in maunds.
Wheat and its mixtures	1,318,295	188,729	1,129,566
Gram	220,385	32,225	188,160
Masur	153,699	24,195	129,504
Teura	175,109	16,069	159,040
Other rabi crops	56,621	10,871	45,750
Juar	310,740	5,593	305,147
Kodon or kutki	754,279	51,619	702,660
Jagni	111,646	2,130	109,516
Tilli	45,862	656	45,206
Sugarcane	396,505	71,359	325,146
Other kharif crops	449,640	32,374	417,264

To get the net produce of gur, I have deducted from the gross output (which is calculated on the total area including seed gardens) the quantity of gur which would be produced at the average rate on the area required to supply the seed sown on the total area.

Total net produce of food grains about 31 lakhs maunds.

Do. do. oil-seeds about $1\frac{1}{2}$ lakh maunds.

Do. do. gur about $3\frac{1}{4}$ lakhs maunds.

Quantity of food-grain, &c., required for local consumption and available for export.

95. The staple food of that part of the population which lives in the open villages is wheat, juar and pulses, and of that part which lives in the jungle tracts, kodon, kutki, juar and pulses. Kodai (husked kodon) is generally used in the form of a broth, and prepared in this way is so satisfying that half a pail or about $1\frac{1}{4}$ lbs. suffices for a grown man, 1 lb. for a woman, and $\frac{1}{2}$ lb. for a child, but for the purpose of this rough calculation the same ration may be taken for kodai as for other grains, viz., $1\frac{1}{2}$ lbs. for a man, 1 lb. for a woman and $\frac{1}{2}$ lb. for a child. The population at census was :—

Men	...	93,837
Women	...	92,187
Children	...	137,172

and may be taken to be now about :—

Men	...	92,000
Women	...	90,750
Children	...	132,250

(The percentage of children is smaller now than at census, as the infant mortality has been very large since the famine.) Then it will require $14\frac{1}{2}$ lakhs maunds of food-grain to feed the population for 12 months.

Probably practically the whole of the tiwra produced is used in the district for well bullocks. A fair annual allowance of gur per house would be 24 seers, considering the poverty of a great part of the inhabitants, and this gives a total annual consumption of 3,600 maunds of gur. Probably about 30 seers of tilli or jagni oil per house per annum or 4,500 maunds in all would be a fair estimate. The balances left for export are then about food-grains $16\frac{1}{2}$ lakhs maunds, oilseeds $1\frac{1}{2}$ lakh maunds, and gur $3\frac{1}{4}$ lakhs maunds.

SECTION IV.

COMMUNICATION AND TRADE.

96. North and south of Betul lie the fertile valleys of the Nerbudda and the Berars each with a considerable local demand for the jungle products of this district and a railway to carry elsewhere the grain and oilseeds for which there is no market nearer. On the north the edge of the lowlands is some 50 miles from the nearest open villages of this district and the railway about 5 miles further. On the south there is only 5 to 20 miles of hilly country between the rich villages of Berar and some of the best wheat growing tracts of this district, but the railway is 40 miles further. The north-west road which runs from Nagpur through Betul and Hoshangabad to the north traverses the district almost from end to end. The 58 miles between Itarsi Railway junction and Betul is metalled and the 25 miles between Betul and Multai is murumed; the last 14 miles from Multai to the Chhindwara border is a III-B road, *i. e.*, only murumed and bridged in bad places. There is no metalled road to the southern border of the district or thence to the railway. Until 3 years ago the only roads to the south were improved village roads on which repairs are executed at a maximum all-round rate of Rs. 5 per mile. In consequence of the superior character of the road communications on the north, nearly all goods not required for local consumption in the Amraoti and Ellichpur districts of Berars go to the Nerbudda valley. I believe until the Multai-Pattan road to the frontier was improved 3 years ago, no merchant ever thought of sending goods to the railway at Amraoti; and even now the traders of this district make little use of the Bhusawal-Nagpur line. In addition to the north-west road, there is a road from Chicholi in the west of the Betul Tahsil to Harda (with a branch to Seoni-Malwa) which is connected with the best country of the Betul Tahsil by roads from Chicholi to Khedi and Badnur. This road was raised from III-A to III-B class by famine labour, and is, I believe, in future to be maintained in that class. It will be seen from what is said below regarding the trade of the district, that this gives fairly adequate road communication with the outside world on the north. It is true that there is no direct road from the centre of the Multai Tahsil to Itarsi, but the north-west road is only a few miles longer than the most direct route and the existing track across the hills north of the Bel river could only be improved into an easy cart road at a prohibitive cost. There are 4 roads cutting through the precipitous range which runs along the southern boundary of the district. Of these only two, the Badnur-Ellichpur road and the road from Multai *via* Pattan to the frontier have been raised to the III-B Class, and those only within the last three years.

The other two, one from Badnur *via* Atner and the other from Multai *via* Birul and the Dabkaghat to the frontier are only Rs. 5 per mile tracks and are very difficult for carts. The former is little used, but the latter, at all events until a couple of years ago, before the other two were improved, carried much traffic, as it is the shortest route from the wheat growing talukas of Masode and Pohni to the Berars. Until this road is in good order and passable for fully laden carts the southern communications of the district cannot be considered sufficient. The produce of the two talukas named, which is destined for the Berars has, now to go either 20 miles east or 20 miles west to find a fair road across the border. I have said nothing of the roads leading to Chhindwara and Nagpur because there is very little trade with those districts. Besides the north-west road which comes direct from Nagpur and traverses the south of the Chhindwara District on the way, there are two passable cart roads, one from Multai direct to Chhindwara and one from Badnur *via* Umreth: the first-named is of the III-B and the second of III-A Class. Within the area of the Central plateau there are cart tracks in all directions, and although they are often rough, the only serious obstacle to traffic in the open season is that part of the Tapti valley, which lies between the point where the river enters the Betul Tahsil and the western border of the plateau. In the rest of the district passable cart roads are scarce. In the jungles of the south there are, I believe, only two besides the four main routes already mentioned, and they are almost impassable for loaded carts. In the Khamapur and Mohta country, the jungles of the west, carts are hardly ever seen

and there are only two roads on which it is possible to use them. In the sand-stone tract, the valleys are wider and more continuous, and there are not a few tracks by which carts can pass without much difficulty; the principal of these are: direct road from Chicholi to Seoni-Malwa *via* Dhodramoh, the Ranipur-Shahpur road and the Shahpur-Dhodramoh road. The map shows that these, together with the two main northern routes previously mentioned, leave no part of the malguzari land in the north of the district at a distance of more than 5 or 6 miles from a passable cart-road.

Exports of grain,
oil-seeds and gur.

97. The exports are grain, oil-seeds, gur and jungle produce. The trade has never been registered. In paragraph 95 I have stated the probable amount of export of food grain, gur and oil-seed. Their value would be about 50 lakhs. The value of exported jungle produce is more difficult to determine. It is no doubt larger than the total siwai income estimated for purposes of assessment, and I dare say reaches half a lakh. The first three commodities named above are brought to market either by the cultivator himself, by petty traders (generally Banias, Telis or Kallars) or by the few dealers of large means who are to be found in the district. If the cultivator has a cart and can spare the bullocks and the time, it will of course pay him better to carry his produce to market himself even if it be as far as to Itarsi, and he not infrequently does this. Sometimes he adds to the earnings from his land by carting a neighbour's grain for hire after he has disposed of his own; gur in particular, owing to its small bulk and greater value is often taken by the growers to the bazar. In every village a little bigger than the average there are one or more petty traders with a few carts or pack bullocks and a capital of a few hundred rupees. These men go about the villages in their neighbourhood buying a couple of khandis of grain here and a mani of oil-seed there, till they have laid out all their capital, when they carry it away to market and after disposing of it and making their profit come back for more. The wealthy traders of the district are, I think, all money-lenders first and merchants afterwards. A considerable proportion of the exports no doubt passes through their hands, but much of it comes to them in the course of their money-lending transactions. This applies particularly to gur: because it is usual for cultivators who owe much, to hand over the produce of their cane gardens every year in a lump to the creditors, retaining for their subsistence the grain which they have raised on their wheat fields and "barras." Wheat is the only grain which is largely exported. Some of the teura grown in the district is said to go to the Berars for cattle food, but the quantity cannot be very large (*vide* paragraphs 94 and 95). Wheat being exported almost entirely for distant markets goes chiefly to Itarsi. The oil-seed which is most largely produced is jagni (ramtilli). There is, I believe, no foreign demand for it, but it is exported to the Berars in considerable quantities. A good deal of tilli is grown, especially in the extreme north and south, and much of it is exported both to the north and south. Most of the surplus Betul gur is disposed of in the bazars of Paratwada, Chandor, Hiverkhed and Sendurjana which lie in the Berars along our border. Some goes to Itarsi, Harda and Seoni-Malwa. Neither the Nerbudda valley nor the Berars grow much sugarcane, but the former being nearer to the cane-growing districts of Upper India, which can produce and sell much more cheaply than the Betul cultivators, takes most of its gur thence.

Export of jungle
produce and timber.

98. The principal articles of jungle produce which are exported are timber, mahua, harra (myrabolam) chironji and gulli. Others of less importance are tikari oil, gum and lac. Except in the jungles in the neighbourhood of Shahpur the timber is extracted from the forest almost entirely by the local Gonds and Korku cultivators. Every year in the hot weather these men go to one of the malguzari jungles in their neighbourhood, of which the owner wishes to cut some trees, or to a coupe of the Government jungle, and taking a license from the malguzar or the Forest Department, each man cuts a few logs and carries them to the best market available. If he has a pair of bullocks and a cart, and he can get his cart to the jungle, he will carry 9 or 10 small logs of teak in one journey; if he has no cart or there be no road to the jungle, he ties three or four logs to the bullocks' yoke and drags them to market along the ground; this is called a 'karras' of wood. Much timber is brought out of the southern jungles in this way. If bullocks are not to be had, a whole family will sometimes take

a load of wood to the market, each member balancing one small log on his or her head. The Gonds, both men and women, are very strong and capable of great endurance, and think little of carrying a heavy load like this for 30 miles each way once a week for a month on end. They make a mess of kodon and various jungle fruits and roots into a hard ball which they sling upon their back, and with this and an old gourd for water are all equipped for the longest journey. Nearly all the timber is taken to market in the hot weather, when there are no crops on the ground to watch and no very urgent agricultural operation to put in hand in jungly villages. I think I am right in saying that most of the timber taken for sale and for the use of the licensee is cut from malguzari forests probably because the fee is generally lower than in Government forest. The fee taken by the malguzar varies very much from year to year and even within small areas in the same year. A fair fee in the Tapti jungles is considered to be Rs. 1-8-0 per karras and Rs. 3 per cart. Four logs is, I think, the maximum that can be taken on a karras and three is more often the number. They are generally from 10 to 15 feet long and about 4 inches cube, when roughly shaped by the Gonds in the jungle. For a log of this sort Re. 1 is the outside price at the bazar. The exporters work hard for a very small profit. Much of the timber taken out of the Shahpur jungles is cut and carried by Chamars who live in the villages near Itarsi in the Hoshangabad District. The jungles there are so much more accessible that the carts can be loaded more heavily. The bullocks used are also larger. A full load there may be as much as 25 or 30 logs, for which the malguzar takes a fee up to Rs. 9. Except in the Shahpur country, teak is the only timber exported in any quantity and, indeed, almost the only timber taken out of the district. But towards Shahpur, much of the teak was cut out of the forest years ago, and in default of it there is a strong demand for tinsa, hardu, saj and kahu. The timber from the Tapti is disposed of at Khumai a very large bazar on the Berar border, that from the Saoligarh and Khamapur jungles goes to Rahatgaon in Hoshangabad and the Shahpur timber to Itarsi.

99. Mahua is more or less abundant in all the jungle covered parts of the district, but is particularly well grown and productive in the sandstone country. The produce is largely in excess of the local demand. The greater part of the mahua produced in the district comes from the malguzari trees, because trees in cleared and cultivated land bear very much more heavily than those in jungle, and the wild animals eat much of the flower which falls in the forest. It is extracted from the Government forest by the coolies of the contractors, who buy at auction the right to collect the mahua of certain areas. In liberally managed malguzari villages, it is the practice for the malguzar to allow each tenant to take the fruit of a few mahua trees, free of charge. The produce of the rest of the trees is collected by the inhabitants of the village and divided with the malguzar. The usual arrangement is that at the first gathering, the malguzar gets $\frac{1}{3}$ rd of the takings, at the second $\frac{1}{2}$ and the third $\frac{1}{4}$. After this anything that remains may be taken as 'sila' or gleanings. But the details vary from village to village. The poor make much use of the flower as an article of food—indeed in jungle villages it is as much a staple food crop as kodon or kutki. But in an average year they always gather something more than they require for their own consumption, and sell it at the nearest weekly bazar to one of the numerous petty traders in jungle produce or to the local kallar. Some of the malguzars who have much mahua are themselves traders in jungle produce and carry it to market themselves, others sell to the merchants of Shahpur, Badnur, Nimpani, Chicholi or Bhaisdehi, &c. Mahua.

100. At last Settlement the trade in harra was very small. Except in the Khamla plateau (the only place in the trap country where it is found in any quantity) the malguzar derived no income from it. The poor used to collect it and after pounding it, sold it to Banjaras or other petty traders who took it on pack bullocks to Seoni-Malwa, whence most of it was taken to Rajputana States. It was used then (as now in India) for dyeing, its tanning properties being apparently little known in this country. The price of the pounded article was then about Re. 1 per palla (a measure not now used in these parts, but said to be about equal to a khandi) and the price of the raw article must have been insignificant. The demand in the Berars was stronger, and the owners of harra on the Harra or myta-bolam.

Khamla plateau made something out of it. The difference in the value of harra in that plateau and elsewhere in the district at the time of the 30 years' Settlement is indicated by the fact that tenants on the Khamla plateau paid at Settlement and pay now very heavy rents which cover the produce of harra trees on their land. In about 1873, that is three years after the Great Indian Peninsula Railway was opened as far as Jubbulpore, a Bhatia Bania of Bombay by name Gokul Dass came to Betul and began to trade largely in harra, exporting to Europe. From that time the crop has been a valuable asset of many villages in the sandstone country. The demand and consequently the price has varied a good deal, and at one time, when stocks were large and demand weak for two or three years together, several large holders got into difficulties from which some of them never recovered. But the price has rarely been below Rs. 3 or above Rs. 5 per khandi of 20 kuros of 8 pailis at Nimpani and Chicholi in the centre of the harra country. A great impetus was given to the trade by the favourable reports of experts on some samples shown at the Colonial and Indian Exhibition in 1886, and prices for a couple of years went up to about Rs. 8 per khandi. The unequal quality of the crop affects the European demand unfavourably. It is due to the fact that the two crops of which one sets in January and the other in August, are both harvested together, so that the nuts are of different degrees of maturity and contain a very varying quantity of 'tannin.' Also proper arrangements for protecting the crop from the heavy dew of the cold weather after it is harvested, are not always made, and under these conditions the nut turns brown and is of less value in the market. In the Khamla plateau tenants take all the crops from trees standing on their land and malguzars the balance, and it is taken to Berars by pack bullocks. Elsewhere the tenants have no right to the crop, and it is all collected by labourers employed by the malguzar or by his lessees. It is not at all unusual for the malguzar to give leases, sometimes for a term of years, of the harra crop to the Teli and Bania traders. The produce is taken down to the Itarsi or Harda road by cart. The traders in harra live mostly at Badnur, Nimpani, Chicholi, Shahpur in the Betul Tahsil, and Aoria of the Multai Tahsil.

Minor forest produce exported.

101. Chironji is the kernel of the berry of the achar tree and is used in sweetmeats. Gulli is the nut of the mahua: an oil is expressed from it, which is largely used locally both for moistening the food of the poorer classes and for supplying and preserving leather. It is also, I believe, exported in considerable quantities to Europe, where it is used in the manufacture of various substitutes for butter. The labouring classes and the poorer tenants have in all villages a prescriptive right to collect as much as they please of these fruits on payment to the malguzar of $\frac{1}{2}$ to 2 pais of chironji and $\frac{1}{2}$ to 2 kuros of gulli per annum. They dispose of their stocks in the local weekly bazars either to telis and sweetmeat sellers, who will use the goods themselves or to the traders in jungle produce who will export them. These latter often barter salt against the chironji offered in small quantities by the poor. Little business is done in lac, the reason is I think that the Gonds consider it unclean and may not touch it without suffering penalties. A good deal of gum of the saj and achar trees is collected in some places, particularly in the north of the district and exported to Itarsi. Salai, the principal, and in many places almost the sole growth on the southern ghats, yields a marketable gum, but I never heard of anyone collecting it. Tikari oil is distilled in the jungles from the grass of that name and sold in the big bazars of the plains. It is used in the manufacture of perfumes, and there is, I believe, a demand for it in Europe.

Weekly markets.

102. At the weekly bazars to which I have referred in several places above, little but retail trade goes on. The tenants sell head-loads of grain or oil seeds, and the labouring classes of jungle produce, and buy oil, salt, cloth, ornaments, cocoanuts and vermillion for sacrifice, or such little luxuries as betel-nut and country spirits. There are, however, a few bazars at which goods change hands in large quantities. The principal of these are Ramli and Birul. At Kherli and Betul there are, as already mentioned, in paragraph 64, weekly cattle markets. The principal jungle produce markets in the district are Ramli, Shahpur, Chicholi and Khomai. There are three annual religious fairs at which household utensils, iron for agricultural implements and finery of various kinds are sold by traders who

come from the towns of Hoshangabad and Berars. These fairs are held at Malajpur in the west of the Betul Tahsil and Multai and Salbardi in the Multai Tahsil. These provide many of the inhabitants with their one opportunity in the year for buying brass household utensils. There are only two places in the district, *viz.*, Ramli and Jawalkheda, at which there are permanent Kasars' shops, and only one of these is a workshop.

103. There are no local manufactures worth special notice. The Mahras and Gadrīs turn out coarse cloth and woollen blankets, and the Sonars and Bhaewas make ornaments for the well-to-do and the poor respectively. The necessary earthen vessels and pipes are made by Kumbhars. Anything beyond this has to be imported. Banjaras weave hemp matting suitable for gunny bags out of san hemp. Manufactures.

104. The most important imports are: salt, cloth, thread for weaving, iron, kerosine oil, spices and cocoanuts. All these articles, with the exception of much of the cloth and thread, which comes from Mowar in the Nagpur District and from Nagpur itself, are brought from Itarsi. Salt is brought in by Cachi merchants who come to Betul for 8 months in every year and go to their own country for the rains. Some of the principal Marwaris and other money-lenders and grain merchants have cloth shops also at which they sell English piece-goods and the more expensive kind of Native clothes. Cheap Bombay and Nagpur mill-made cloths are mostly sold at the annual fairs referred to above. Iron is sold only at Betul, Badnur and Multai by three or four shop-keepers. The other articles mentioned may be bought anywhere in the district. Juar is imported from Berar in exchange for gur and a little wheat. Imports.

105. The cost of carriage of a given quantity of goods varies of course both with the time of year as well as the state of the road. In the busy season cart and bullock hire goes up, and on a bad road like that to Seoni-Malwa or Chandol, the carts cannot carry a full load. The normal cart-loads are:— Cost of carriage.

Wheat 2½ khandis equivalent to	} about 10 maunds.
Oil seeds 3 khandis "	
Mahua 4 "	
Harra 3 to 3½ "	

and the normal rates of hire are as below:—

Route.					HIRE.	
					Per cart.	Per pack bullock.
					Rs. a. p.	Rs. a. p.
Badnur to Itarsi	...	...	...	...	3 12 0	1 0 0
Multai to Badnur	...	...	...	...	1 12 0	0 10 0
Badnur to Ellichpur	...	...	...	...	7 0 0	2 0 0
Multai to Chandol	...	...	...	...	6 0 0	2 0 0
Multai to Barud	...	...	...	...	2 4 0	0 8 0
Nimpani to Itarsi	...	...	...	...	3 0 0	0 12 0
Shahpur to Itarsi	...	...	...	...	2 0 0	0 10 0
Badnur to Harda	...	...	...	...	5 0 0	1 8 0
Badnur to Seoni-Malwa	...	...	...	...	5 0 0	1 8 0
Chicholi to Harda	...	...	...	...	4 0 0	1 4 0
Chicholi to Seoni	...	...	...	...	4 0 0	1 4 0

SECTION V.

PRICES.

Prices.

106. The most important crops grown are wheat, kodon, kutki, jagni and sugarcane. Mr. Ramsay's Settlement Report gives the price of wheat for the years 1854 to 1864: the official price returns give the figures for wheat from 1861 to date, and for kodon from 1885 to 1891. There are no official returns for kutki and jagni and gur (in which form the sugarcane is brought to market). At the time of last settlement the trade in grain and gur was carried on almost entirely by travelling Telis, Baniyas and Kalars with pack-bullocks, and there are no old firms in the district which traded in grain in those days except that of Seth Sunderlal, Rai Saheb, of Multai, whose books were burnt in the great fire in Multai in 1887. The trade of that firm also was principally in opium. The cultivating classes do not as a rule keep accounts of their sales of produce. But the late Sadoba Patel, of Jhallar, who was the head of one of the most prominent Kunbi families and a man of more than average intelligence and integrity, with the assistance of his Kamdars, made out a list of prices of wheat, kodon, kutki, jagni and gur from 1860 to 1894. This list was discussed at a meeting of the prominent landholders of the district which was called in 1895, and was declared to show with sufficient accuracy the course of prices in the interior of the district (*i. e.*, at places other than the towns of Badnur and Multai). The three tables below show the price of wheat in seers per rupee during the five years immediately preceding Mr. Ramsay's 30 year settlement, and the five years preceding the inception of proceedings for revision of that settlement:—

PRICES OF WHEAT IN SEERS PER RUPEE.						
Number of Table.	1859.	1860.	1861.	1862.	1863.	Average of 5 years.
Table A	(a) 32'00	(a) 32'00	(a) 24'10	(a) 16'00	(a) 13'30	23'48
Table B	(a) 32 00	(a) 32'00	(b) 35'36	(b) 17'14	(b) 18 21	26'94
	1890.	1891.	1892.	1893.	1894.	Average of 5 years.
Table C	(c) 17'26	(c) 13'70	(c) 12'73	(c) 18'12	(c) 18'15	15'99

(a) Figures taken from Mr. Ramsay's Settlement Report. (b) Figures taken from official returns for District Head-quarters.

(c) Figures from official returns for Betul Tahsil Head-quarters.

Since 1885 prices have been recorded at every tahsil head-quarters, but as the Multai Tahsil prices differ in the quinquennial period ending 1894 by a few decimals only, the Betul figures will suffice for our present purpose. There is a considerable discrepancy between the figures given in Settlement Report and those of the District Price Returns from 1861, and I am inclined to accept the district figures as more likely to be correct, because in 1861 there was, I believe, no reason why prices should rise 25 per cent at a bound. The effect of the American War of Secession was not felt till the next year. These prices do not represent accurately the prices obtained by the cultivators for their produce. Even now, when a good deal of the grain sold passes for export through the hands of merchants at head-quarters, there is an appreciable difference between prices at head-quarters and in the local bazars, and 30 years ago when grain was not brought to head-quarters for export and a small ring of local dealers regulated their stock so as to keep prices as high as possible, the difference between the prices of the town and those of the village must have been larger. This probability is confirmed by the list

of prices supplied by Sadoba Patel, from which I extract in Tables D and E below Sadoba's figures for wheat for the years shown in Tables A, B and C above.

PRICES OF WHEAT IN SEERS PER RUPEE.

Number of Table.		1860.	1861.	1862.	1863.	Average.
Table D	...	43'00	54'00	36'00	27'00	40'00
	1890.	1891.	1892.	1893.	1894.	
Table E	...	16'61	18'00	15'42	15'42	18'00
						16'69

Uneducated cultivators cannot, of course, specify the Sambat, Fasli or Christian year to which the prices relate, but they were asked to state prices as far as they remembered them in the following five years: (1) The year of the mutiny (1857), (2) the year after (1858), (3) the year of settlement (1864), (4) the year when the Great Indian Peninsula Railway was opened to Jubbulpore (1870), (5) the year of the famine in the North-West and Madras Provinces (1878). The average of the prices stated by different villagers is shown below for these years in seers per rupee:—

	1857.	1858.	1864.	1870.	1878.
Table F	47'81	23'90	25'71	20'53	10'16

The prices from 1864 onwards are within a couple of seers per rupee of those given in Sadoba Patel's list and afford some corroborative evidence of its correctness. It is not worth while to give the list in detail here, but I may add that although his prices are always lower than those given in the district returns, the periods of high and low prices correspond very closely in both sets of prices. His list gives the following prices for husked kodon and jagni during the same two periods, and shows that the price of kutki follows that of kodon very closely:—

Number of Table.	1860.	1861.	1862.	1863.		Average.	Name of crop.
Table G	43'00	54'00	36'00	27'00	...	40'00	Kodon.
	43'00	48'00	34'56	28'00	...	38'39	Jagni.
	1890.	1891.	1892.	1893.	1894.	Average.	Name of crop.
Table H	16'61	18'00	15'42	15'42	18'00	16'69	Kodon.
	15'84	18'00	14'40	14'40	13'50	15'23	Jagni.

Tables B and C (official returns) show a rise of 69 per cent. in the price of wheat since the quinquennial period in which the settlement was effected; Tables D and E (Sadoba Patel's list of village prices) show a rise of 139 per cent. in the same commodity and for the same period; Tables G. and H. show that the price of kodon has risen 139 per cent. and of jagni 152 per cent. The quinquennial averages for the price of gur as given in Sadoba Patel's list are in rupees per khandi of 280 seers:—

				Rs.	a.	p.
Five years ending	1864	...	...	29	9	7
Do.	1869	...	...	46	6	5
Do.	1874	...	...	51	0	0
Do.	1879	...	...	43	0	0
Do.	1884	...	...	37	9	7
Do.	1889	...	...	37	6	5
Do.	1894	...	...	34	0	0

The lowest figure is Rs. 20 per khandi in 1860 and the highest Rs. 60 in 1870 and 1871. Although the price is somewhat erratic all through the period of 35 years, there is a fairly steady rise up till 1870, and a fairly steady fall after 1871. The last quinquennial average is about 13 per cent. above the first. In 1895 the price fell to about Rs. 25 per khandi, the lowest rate since the settlement. Since then there has been a rapid recovery, and last year excellent prices up to Rs. 60 per khandi were obtained. This rise was, however, temporary and was due to a diminished area under the crop which was a result of the short rainfall of the famine year. The price is now normal again at Rs. 35 to Rs. 40 per khandi. The reason for this general instability of price is no doubt that gur being a luxury for a large proportion of the population, the demand is unsteady, while as the crop is always irrigated the supply is fairly steady. After 1864 the price rose with the other prices of agricultural produce, till it reached its maximum in 1870, when the opening of the Great Indian Peninsula Railway as far as Jubbulpore gave a sudden impetus to the trade of this part of the provinces. The large profits which could be made with such prices by cultivators of the cane induced many tenants and malguzars to sink wells, and in a few years the area under sugarcane largely increased. The area under the crop at attestation was 6,114 acres as against about 3,200 acres at settlement, and the area now is smaller than it was 10 years ago. The new railway also soon began to bring down a quantity of Bengal and North-West Provinces gur, which being in great part grown under canals and tanks can be more cheaply produced and sold than the Betul gur, and soon brought prices down. I shall touch on the question again in the paragraph relating to the cultivation of cane. From what has been already said, it will be clear that the price of gur is very erratic, but that on the whole what was a fair price at settlement is a fair price now.

Increase in cost of
cultivation.

107. It remains to be seen what increase in the cultivator's profits has resulted from the rise in prices of his produce; that is, has there been any, and if so, how much increase in the cost of production? The expenses of cultivation of rabi and kharif crops, excluding sugarcane, may be divided into cost of seed, cost of implements, wages of labour, perquisites of village servants, and cost and feed of bullocks. Manure and water are hardly used except for sugarcane, and may be left out of account in estimating the cost of cultivation of the ordinary rabi and kharif crops. The greater part of this expenditure is incurred in kind and has increased in the same proportion as prices. The following items all come under this head: seed, perquisites of village servants (patwari, kotwal, carpenter, blacksmith, &c.), wages of ploughmen and reapers, &c., and the quantity of grain paid has not varied since settlement. The cost of implements is very small. The wood costs nothing, and the small pieces of iron fittings very little, and they last several years. The wages of labour employed in putting them together are included under the head 'Perquisites of village servants.' Cash expenditure is incurred only in weeding kharif crops, in threshing and winnowing, in payment of a small part of the ploughmen's wages, and in purchase of plough-cattle. The cash payment to the ploughman is the same as at settlement. It is generally affirmed by cultivators that the cash wages paid for weeding, threshing and winnowing are the same as at settlement. The wage returns published by the Government of India do not go back beyond 1873. In that year wheat was selling at 21 seers per rupee as against 16 seers at the present moment: but the compilation entitled "Prices and Wages" in India states the average wage at Rs. 4 per mensem, or two annas a day, the same as at the present day. Mr. Ramsay in his report incidentally mentions that the cash wages of labour were showing no tendency to rise with the price of food-grains. I take it therefore that the cash wages paid for agricultural labour are the same now as at settlement. It is difficult to ascertain what was a fair price for bullocks at settlement. Cultivators will generally stoutly assert that the price has doubled, but if pressed for details, it generally appears that they take the present price of an average pair of bullocks in open villages at Rs. 70 or Rs. 80. No doubt there are a number of bullocks of this value in the open parts of the district, but they are owned by malguzars and the best of the tenants with sugarcane cultivation. The figures which I have given in paragraph 62 show that the average price of plough-cattle is much less than this. It is in fact at the most Rs. 40 for a pair of bullocks in open villages and Rs. 25 in the Gond villages of the jungles. The work being lighter in the light kharif soils,

a pair of bullocks costing Rs. 25 will last as long in the kharif villages as a Rs. 40 pair in the open country. Mr. Ramsay gives no information on the subject of the price of cattle at settlement, and as I have shown above, the information that can be gleaned on this subject from cultivators is not very reliable, but there is no doubt that the reservation of the Government forest, with the introduction of a system of grazing fees, the rise in the price of grain, and the greater demand for cattle caused by the increase in the cultivated area, must all have tended to drive up the price, and for the purposes of this calculation, it may be assumed in order to be on the safe side that the price of cattle has doubled. With hard work and insufficient food, which induce disease, besides wearing out the animal prematurely, the average bullock is usually not fit to work for more than four years. Most tenants in open villages have a small plot of poor land on the bank of a nala or the top of a little knoll, which if not kept under grass would be valueless. They cut and stack the crop from this plot, and this with a little teura or oil-cake in the hardest working season, lasting say three months in the year, is all the food that the bullocks get besides what they can pick up on the grazing grounds. In the cultivation of cane and the preparation of gur for the market a number of other items of expenditure are of course included, amongst which the principal are manure, fuel, fencing, cost or hire of mill and evaporating pan, and cost of extra bullocks. In estimating the cost of all three classes of cultivation at settlement, I have been guided so far as possible by the information given in Mr. Ramsay's Settlement Report, but his statement of expenditure is defective, in that it omits some important items (*e. g.*, cost of bullocks in the estimate of rabi and kharif cultivation). I have supplied these omissions from enquiries now made. Below I give estimates of cost of cultivation of a plough of rabi land, a plough of kharif land, and a large sugarcane garden at present and at settlement. I have supposed that the rabi and kharif holdings have been sown with the various kinds of rabi and kharif crops in the normal proportion (paragraph 70). For this purpose I have assumed that the prices of food-grains have risen by a percentage about half way between the highest and lowest percentages brought out by the calculations in paragraph 106, *viz.*, 100 per cent., and I have in each case supposed that hired labour is employed and the tenant does not himself cultivate. The payments in kind are in a rabi village made partly in wheat and partly in the pulses which are cheaper, and I have valued this mixed grain at the rate of 18 seers per rupee or Rs. 10 per khandi. In a kharif village the payments are made in inferior grains valued at half this rate.

Cost of cultivation of plough ($2\frac{1}{2}$ khandis or 10 to 12 acres) of rabi land.

Items of expenditure.	Cost.	
	At present.	At settlement.
	Rs. a. p.	Rs. a. p.
Implements	2 10 0	2 10 0
Bullocks (prime cost Rs. 40, lasting 4 years) ...	10 0 0	5 0 0
Perquisites of village servants (including garpagari or "hail-scarer"), all in kind except 2 annas to Patwari.	5 2 0	2 10 0
Feed of bullocks (this allows a few rupees for grass as well as teura and is a liberal estimate).	10 0 0	5 0 0
Wages of ploughmen for a year (all in kind except Rs. 1-8-0) ...	26 12 0	14 2 0
Sowing (part cash, part kind)	2 2 0	1 9 0
Reaping (all in kind at contract rate of 5 kuros for 1 khandi of land) ...	5 0 0	2 8 0
Threshing and winnowing	3 4 0	2 7 0
Seed $2\frac{1}{2}$ khandis with interest at 25 per cent. in kind ...	35 0 0	17 8 0
Total ...	99 14 0	53 5 0

Cost of cultivation of a plough (about 15 acres) of kharif land.

Items of expenditure.	Cost.	
	At present.	At settlement.
	Rs. a. p.	Rs. a. p.
Implements (the weeding hoe is required in addition to implements used in rabi cultivation).	3 0 0	3 0 0
Bullocks (prime cost Rs. 25, lasting 4 years) ...	6 4 0	3 2 0
Perquisites of village servants (all in kind except 2 annas to Patwari) ...	3 4 0	1 11 0
Wages of ploughmen for one year (part cash and part kind) ...	20 8 0	10 12 0
Sowing ...	0 15 0	0 5 8
Weeding twice (this provides for a very thorough weeding of all the crops that are habitually weeded).	7 8 0	5 10 0
Reaping (at 3 small pailies of kodon, kutki or rice, and 1½ of juar or urad per reaper per diem).	19 0 0	9 8 0
Threshing and cleaning ...	1 0 0	0 6 0
Seed with interest at 100 per cent. on oilseed and 50 per cent. on other grain.	6 0 0	3 0 0
Total ...	67 7 0	37 6 8

The estimate of cost of sugarcane cultivation is based on a comparison of the results of half a dozen detailed enquiries, and represents the cost of cultivating a large garden of good soil. It would not pay to cultivate a smaller or less fertile garden so highly. At settlement, only wooden mills were used, and they and the pans were generally hired: so the estimate under these heads is for hire only. In estimating other items of expenditure at settlement, I have proceeded on the assumption that the same amount of labour was required, and the same cash rates were paid.

Cost of cultivation of sugarcane plots of three acres.

Items of expenditure.	Cost.	
	Now.	At settlement.
	Rs. a. p.	Rs. a. p.
Seed (pachrang) ...	50 0 0	28 0 0
Manure (about 70 cart-loads, including carting) ...	30 0 0	30 0 0
Carrying and sowing seed ...	6 0 0	6 0 0
Digging trenches for irrigation ...	6 0 0	6 0 0
Weeding three times ...	9 0 0	9 0 0
Binding canes ...	6 0 0	6 0 0
Fencing of bamboo and thorns ...	20 0 0	10 0 0
Bullocks (3 pairs @ Rs. 80 each to last 4 years) ...	60 0 0	30 0 0
Wages of three ploughmen (nearly all in kind) ...	116 0 0	60 0 0
Mot, nara, oil and repairs to well and conduits ...	15 0 0	8 0 0
Feed of bullocks (at 2 seers oilcake, one seer teura per bullock per diem for six months, and grass).	80 0 0	30 0 0
Total cost of cultivation ..	398 0 0	223 0 0

Cost of preparation of gur.

Items of expenditure.	Cost.	
	Now.	At settlement.
	Rs. a. p.	Rs. a. p.
<i>Cost of preparation of gur—</i>		
Cost of iron mill (prime cost Rs. 165, plus Rs. 100 for repairs every 8 years. It lasts 30 years).	17 0 0	4 8 0
Evaporating pan (prime cost Rs. 70, lasts 8 years) ...	9 0 0	Included above.
Labour for pressing and boiling juice ...	20 0 0	20 0 0
Value of gur paid for hire of extra bullocks required for the Mill ...	12 0 0	12 0 0
Firewood for boiling the juice ...	30 0 0	15 0 0
Wages of carpenter, blacksmith and chamar and special perquisites of kotwal.	5 12 0	5 12 0
Cloth for draining gur ...	2 0 0	4 0 0
Cost of prayers to secure a good boiling ...	3 0 0	3 0 0
Total cost of making the gur ...	96 12 0	64 4 0
TOTAL COST OF PRODUCTION OF GUR ...	494 12 0	287 4 0

The value of the produce of the various holdings would be—

Class of holding.	Now.	At settlement.
	Rs. a. p.	Rs. a. p.
Rabi land ...	161 7 0	80 11 7
Kharif land ...	95 10 0	47 13 0
Sugarcane ...	675 0 0	624 0 0

and the net profits—

Class of holding.	Now.	At settlement.
	Rs. a. p.	Rs. a. p.
Rabi land ...	66 9 0	27 6 3
Kharif land ...	28 3 0	10 6 4
Sugarcane ...	180 4 0	336 12 0

I have of course included the produce and value of unhusked kodon, kutki and rice in the above estimate of value of produce and not of the husked grain.

108. By combining the estimates of costs of production and net profits per acre at the present day in the proportion which the normal areas under the three classes of crops bear to one another, a rough average may be obtained for the district as a whole. The averages thus obtained are :—

		Rs. a. p.
Cost of production ...	...	7 15 0
Net profit ...	...	4 5 0

Rent enhancement justified by economic considerations.

But these figures are rather larger than they should be, because the normal cane area (paragraph 70) is larger than that of the present day, and for reasons given in paragraph 89, the area under this crop is never likely to attain its former dimensions. The gross inaccuracy of the settlement cropping statistics makes it impossible to do more than guess at the all-round average cost of production and net profits of settlement. There is no doubt that the rabi area of settlement was really rather smaller than that of the present day, say 260,000 acres, and the sugarcane area may be taken to be about 2,700 acres (*vide* paragraph 70), but it is not so easy to determine the probable correct area under kharif. I have said in paragraph 68 that owing to the dahia cultivation which was practised in jungle tracts at settlement, it is probable that a smaller proportion of fallow existed in the occupied area than at the present day, but still it seems probable that the settlement records did understate the area of current fallows in occupied lands. The best way to form an estimate will be as follows. Assume that the occupied area of settlement is approximately correct: almost all the new land taken up since settlement is very poor, and we may roughly say that half is fallow and half under crop: the area of new land taken up is 238,883 acres, half of this, *viz.*, 119,441 acres, is under crop: the balance of the present cropped area, *viz.*, 501,311 acres was on land occupied and presumably cropped at settlement and represents the probable true cropped area of settlement: deduct from this 262,700 acres under rabi and sugarcane, and the balance, 238,611 acres, is the probable kharif area of settlement. The average cost of production and net profits per acre at settlement are then Rs. 4-4-0 and Rs. 2-5-0 respectively. The all-round rent-rate at settlement was Re. 0-6-1, and the following figures represent outlay and profit on an acre of land at settlement:—

Annual outlay—

			Rs.	a.	p.
Cost of cultivation	...	...	4	4	0
Rent	...	...	0	6	1
	Total	...	4	10	1
Value of produce	...	...	6	9	0
Profit	...	...	1	14	11

Percentage of profit on annual outlay is 42. Then if the percentage of profit on annual outlay is to remain the same as at settlement, the settlement rent per acre must be enhanced by the value of x in the following equation:—

(Present annual outlay, *viz.*) Rs. 7-15-0 + Re. 0-6-1 (annual rent at settlement) + x = (present value of produce) Rs. 12-12-0 — 42 per cent. of (Rs. 7-15-0 + Re. 0-6-1 + x). The value of x is Re. 0-10-7 or 174 per cent. of the settlement rent, and if the settlement rent be enhanced by this percentage, the percentage of profits on outlay will remain the same as at settlement; the figures will be as follows:—

Annual outlay—

			Rs.	a.	p.
Cost of production	...	...	7	15	0
Rent	...	...	1	0	8
	Total	...	8	15	8
Value of produce	...	...	12	12	0
Net profit	...	...	3	12	4

Percentage of Rs. 3-12-4 on Rs. 8-15-8 is 42.

Other circumstances affecting degree of enhancement justified.

109. If the settlement rent was an economic rent it must be enhanced 174 per cent. to give the economic rent under existing conditions. As a matter of fact we may conclude that the settlement rent was much below a fair economic rent, because the rent enhancement which followed on the 33 per cent. enhancement of revenue was only 5 per cent. The all-round rent-rate of Re. 0-6-1 is in fact practically the same as that which was paid during the 20-year settlement at a time when prices were much lower than they were at settlement. It is therefore clear that considerations of prices and cost of production justify a much larger rent enhancement than it would be possible to take *per saltum* without excessive reduction of the existing incomes of malguzars and tenants.

SECTION VI.

POPULATION.

weighed. In the other two years the crops were weighed as soon as cut. Little jagni is grown on retari. I think the all-round normal outturn per acre is about 150 lbs.

Tilli.

82. About this crop also I need say no more in this place. The crop is of less importance than jagni and very few experiments have been made. Four on bardi mutafarikat in 1894-95 give an average of 190 lbs. per acre, and one experiment in that year on bardi mutafarikat geunra gave 420 lbs. The crop in that year was not above the average, and one of the four crops cut on bardi mutafarikat had been damaged by frosty mists and gave only 130 lbs. to the acre. Two experiments on retari mutafarikat in 1896-97 gave 160 and 80 lbs. per acre. The sihar II, which grows a good deal of tilli in the north of the district, probably yields rather less than the bardi near head-quarters, on which the four experiments of 1894-95 were made, and the bardi and mutabarra of the south of the district yields heavier crops. I take it that the all-round average is about 200 lbs. per acre.

Cultivation
of sugarcane.

83. Though this crop covers a small area—average of 4 years from 1891-92 till 1894-95 is 8,168 acres—it is of great importance in this district owing to the fact that the produce is valuable and that a large number of cultivators grow it in small plots. The field in which the crop is grown is divided into several plots not less than three and rarely more than four in number, and the sugarcane is grown on each plot in turn. It is always irrigated: generally from a well, but occasionally from a hole beside a river bed known as a 'bhurka.' I have seen the cane on every soil in the district. The comparative merits of the different soils as cane-producers will be discussed further on. As a good deal of skill and capital is expended on the cultivation of this crop, I will give some description of the methods followed in cultivating the cane and making the gur, before considering the results of crop experiments with a view to estimating the average output. Before the rains, manure is laid down in the plot selected, and during the rains and the first months of the cold weather, it is ploughed backwards and forwards until a sufficiently fine tilth has been obtained. If the cultivator has been unable to give the land all the cultivation it requires, he sometimes breaks up the clods with a kodali or the back of an axe before sowing. At the end of December or beginning of January, the field is divided into numerous small plots with the main irrigation channels between them and the smaller ones across them. The furrows are made by using a plough with a triangular board fastened above and at the back of the share. The seed, which consists of small pieces of cane containing each three or four eyes, is then sown. The sower lays them in the water channels (both large and small) which have been previously well watered, and as he drops each piece of seed, puts his foot on it, so as to partially bury it. As soon as the plot is sown a watering is given and the crop is then left without water for 15 days. If the cultivator have any well-rotted manure, he now spreads it on the surface of the land. The crop is then fenced. This fence should be made of thorny bushes beaten into a flat mass and placed between a double line of stakes fixed in the ground. The dead leaves which were stripped off the last year's canes before they were put through the mill are then stuffed into the crevices and a very stiff hedge 6 feet high is the result. But very often the cultivator cannot afford such an elaborate affair as this, and merely runs up a rough hedge of tinsa or lendia boughs which will keep out cattle but not jackals. A large part of the materials of the fence are used for more than one year. At the end of the fifteen days, the cane must be regularly watered. During the cold weather no part of the crop should be without water longer than eight days, and as the weather gets warmer the intervals of watering should not exceed four days. By the beginning of the rains the crop ought to be 3 to 4 feet high. During the monsoon there is nothing to be done but keep down the weeds, and as the canes begin to swell and sweeten, to keep off wild animals and bind the canes together so that they may not be broken by the wind or cracked by the heat of the sun. At the end of September, even before the rains have well ceased, watering must begin again. Great importance is attached to proper irrigation at this time, and it is considered unsafe to trust to the heavy showers which usually fall at the end of the rains. In the middle of December the harvest begins. The first 'haris' to be cut are those intended to be used for

and make much use of wells, principally for sugarcane cultivation. They are found principally in the northern half of that part of the open trap plateau which lies in the Multai Tahsil. They are hard working cultivators, but are too much addicted to the bottle. The Gaulis are found in the sandstone country, which forms the northern third of the district. The majority of them are of the Nandbansi tribe and are agriculturists. There are, however, a number of Ranya Gaulis, who are cattle-breeders. They have no traditions as to their place of origin.

The rest of the castes are scattered all over the district. The Kirars, Malis and Rajputs are cultivators, and the remainder follow various trades or earn a bare subsistence by daily labour. The Kirars are a very quarrelsome independent people of whom it is said locally: "If you put a rupee between two Kirars they became like *must* buffaloes in Kuar." In this they are, I believe, different to the same caste in other districts, where they are generally of mild disposition.

The Malis are excellent cultivators and make a great deal of use of irrigation, generally for vegetable gardens. They are generally badly off, because they subdivide their holdings to an excessive degree. This is, I believe, due to family quarrels which are unusually frequent in this caste owing to the men generally having several wives.

Incidence of population per square mile.

112. Only two places were classed as towns at the census of 1891, and their united population was only 10,274 persons. The average number of inhabitants per village was then 271, and 52 per cent. of the villages have a population of less than 200. The number of inhabitants per square mile is probably now 79, and excluding Government forest area about 118. In the most thickly populated tracts the Betul, Masode-Pattan and Jawalkheda groups there are 220, 169 and 180 persons to the square mile. The number of acres of normal occupied and normal cropped area respectively per inhabitant is about 3 and 2 acres.

Education.

113. Education is, I think, little more advanced than when Mr. Ramsay wrote his report. In the majority of villages in the district there is no person able to read and write, and even in those where literate persons exist, few of them belong to the ordinary tenant classes.

Occupations.

114. The number of people engaged in each of the principal occupations at the census of 1891 is shown below:—

Breeding and tending stock	...	...	6,497
Landowners	...	...	5,230
Tenants	...	...	153,133

Agricultural labourers:—

(a) On yearly wages	...	...	19,242
(b) On monthly wages	...	...	903
(c) Casual field labourers	...	...	39,213
Total of persons depending on agriculture for a living.			217,721
Firewood and grass gatherers and sellers	...	...	10,665
Weavers of cotton fabrics	...	...	9,602
Other artisans	...	...	10,595
Connected with commerce (bankers, merchants, &c.)...			2,334
Oil pressers	...	...	4,067
General labourers	...	...	15,833
Beggars	...	...	2,090

The persons included in these classification.

Daily-labourers.

115. Twenty per cent. of the casual farm labourers as well as the labourers may be included in this c

at certain seasons of the year earn their living by reaping or weeding the crops, and at other seasons by working on the roads, mending the houses of the well-to-do, grinding corn, &c., and the distinction drawn in the census papers between casual field labourers and general labourers, appears rather an arbitrary one. In the open villages they are mostly Mahars and in jungles Gonds and Korkus. All these people are habitually at certain times of the year on very short commons. From the middle of August they get jobs at weeding and reaping and in the north of the district gathering harra until December. A number of Mahars then go to the Berars and Wardha to work in the cotton ginning and pressing mills and others get work in the Berar cotton and jari harvest until January, the crop being a good deal later there than here. Except in the sugarcane villages they have then to tide over a month or two with very occasional odd jobs, and the help of what they have been able to put by from their earnings during the kharif harvest here and in the Berars. In the jungly tracts this is the time for digging up those roots for which there is a market in the local bazars. A small plant, called jhunjaru, furnishes the poor at this season with a seed, which when mixed with kodon or kutki is edible and assists to support life. In the sugarcane villages this is a busy time, and there is abundance of labour at good rates. The wheat harvest keeps all hands well occupied for a month, and is at once followed by the flowering of the mahua. But from that time, *i. e.*, the middle of April, till the middle of August, the casual labourers can expect to get little work even in a normal year, and if they have not been able to earn sufficient in the rabi harvest to carry them on with the addition of mahua till the weeding begins, they are in a sorry plight by the beginning of the rains. All over the sandstone country and in the jungles that fringe the trap plateau, there is gulli (mahua nut), chironji and bhilawa (marking nut) to be gathered and sold, and these take the place of the larger earnings of daily labour in the open villages: mahua is a somewhat uncertain crop, two or three days of cloudy weather, even without rain, just at the time the tree is bursting into flower will wither almost every flower on the trees, and the poor must fall back on leaves, roots and berries of the fields and jungles. From the north of the district a number of Gonds and Korkus go to the Nerbudda valley for the rabi harvest, and earn much more than they could in the limited rabi area of this district.

116. When people are at the best of times living so near starvation point as this, it would appear at first sight that a slight failure of the kharif, rabi or mahua crops would plunge them at once into a state of privation which they could not long endure. But the jungle tribes are of so hardy a physique that they can, and frequently do, keep themselves in robust health on a diet of little more than leaves and roots mixed with the husks of grain. As an instance of the endurance of these people, I would cite the circumstances of the hot weather and beginning of the rains of 1898, the year following the famine. In this district the effects of the bad crops of 1896-97 were such that in spite of the placing of a large part of the rabi area under kharif crops, which are much cheaper to sow, the total cropped area was 23 per cent. short of the normal in the year 1897-98. The greater part of the shortage occurred in the jungly localities. The area sown with kharif bore a bumper crop, but the rabi crops were poor, wheat, the most important giving an outturn only about 75 per cent. of the normal at a liberal estimate. Added to this the harra crop was almost *nil* and mahua was so much damaged by cloudy weather that it yielded no better crop than rabi grains. Sugarcane in many gardens failed entirely, owing to the want of water in the wells in the hot weather of 1897. Prices were a little above the average. This was in fact an abnormally bad year, and it came upon the poor without affording them a breathing space to recover from their struggle with the famine. Measures were taken to give village relief where necessary, but the maximum number on relief at any one time was only 1,762, and almost all of these were in some way incapacitated for earning their living. There was no suggestion of a death from privation or starvation at this time, and it is certain that had no relief at all been given, the number of deaths that would have resulted would have been scarcely large enough to raise the death-rate of the district 1 *per mille*.

Condition of the
labouring classes in
unfavourable sea-
sons.

117. The remuneration for reaping is paid in kind except in unusually seasons when the cultivator's crop is scanty and prices high, when he sor

refuses to hire labour except on cash payment, but this rarely happens. The average rates are: rabi crops, if done on contract, 5 kuros for a khandi of land (about 5 acres) otherwise each reaper takes one sheaf in 20. Kharif—three pailis of unhusked kodon, kutki or rice per reaper per diem equal to about $1\frac{1}{2}$ of cleaned grain and $1\frac{1}{2}$ pailis of other grain. Weeding is always paid for in cash. The rate varies considerably from village to village being higher in those with a smaller labouring population in proportion to the cropped area and *vice versa*. The reason for this is that it is not usual for labourers to weed in villages which are not cultivated from the *busti* where they live. This work is done chiefly by the women and they work from about 10-30 till 5-30, having first to complete their household duties. This is known as the 'Banihari din'. The usual rate is from 3 to 4 pice per diem. In the famine year owing to the fact that many cultivators weeded their own land or left it unweeded, the supply of labour was largely in excess of the demand in those parts of the district remote from relief-works, and the rate fell to two pice in many villages. By general labour a man can earn 8 pice per diem and a woman 6 pice. The rates for labour employed in the sugar-cane harvest are high because the hours are long and the work hard. The operations in which the largest number of workers are engaged are digging the canes up, for which a man is paid 8 pice per diem: cleaning the canes, of leaves, and lopping off the flags for which women receive 6 pice per diem: tending the evaporating pan and furance for which men are paid 10 pice per diem. The gathering of mahua is always paid for by a share of the crop varying from a quarter at the first gathering to half at the last. Harra picking is paid for in cash. In a normal year the pickers are paid at one pice per kuro for the first picking, two for the second, three for the third and four for the fourth picking.

Maize gardens.

118. A number of the labouring classes have a small garden 'makka bari' varying from a few square yards to a quarter of an acre, and in some of the jungle villages half an acre. In these they sow beans (balhar), maize, tobacco or chillies, &c. The total number of tenants holding these makka baris only, who are recorded in our papers, is 17,414, which at the district average of 5.9 per house gives a total population of 102,484 persons of the labouring or artisan classes, who add the produce of baris to their other earnings.

Artizans and weavers.

119. The weavers of the district are Mahars by caste. Only about one-third of this caste practise the craft, the remainder being day-labourers. They weave only the coarsest kinds of white cloth. They get most of their thread from the Bombay and Nagpur mills. Their cloth is considered stronger than the cheap kinds of mill cloth, and though it costs about 25 per cent. more, cultivators often purchase it in preference to mill cloth. Competition with the mills has made the Mahars lower their prices 25 to 33 per cent. since settlement, but their profits have diminished in a smaller proportion, because the thread which they now get from the mills costs them less than that which they used to spin themselves; still their profits have largely decreased, and this combined with the rise in prices of food, keeps them little less poor than the daily labourers. They are also very much addicted to drinking a more than is good for them. A few of them, generally village watchmen of more thrifty habits than their fellows, have a small money-lending business.

Artizans, blacksmiths, &c.

120. Amongst other artizans I include carpenters, blacksmiths, barbers, goldsmiths and tanners. The first three are paid a fixed yearly wage in kind by the cultivators for whom they work. There are a surprisingly small number of them (carpenters and barbers about one house for every 3 villages and blacksmiths less than one house for every two villages) and they are generally comfortably off: goldsmiths are few and are confined to the towns and bigger villages. Tanners are also locally distributed. Under the 30 years' Settlement the hides of dead cattle were the perquisite of the village watchmen of the village in which they

These men are always Mahars in this district. They collect the skins and sell them to the Chamars. Under the new arrangements hides of dead cattle in most villages been declared to be the property of the owners, and it is likely that this may result in the Chamars being gradually distributed more over the district.

121. The oil-pressers not infrequently own two or three head of cattle beside the bullock required for the oil-press (ghana) and use them to carry the goods which they buy and sell in the capacity of middlemen between the small tenants and the markets. If they have not this additional source of income they are generally poor, except in the large villages. For every paili of tilli seed they must return 5 chhattaks of oil and for every paili of jagni and gulli 4 chhattaks of oil. Their remuneration is Re. 0-1-6 for pressing one kuro of jagni and tilli and Re. 0-1-0 for a kuro of gulli plus the oil cake. The press holds one kuro of gulli and $\frac{1}{2}$ kuro of jagni or tilli. In a day they can empty the press six times with gulli and four times with jagni and tilli and each time get about 4 seers of gulli cake and 2 seers of tilli and jagni cake. The latter sells at 2 to $2\frac{1}{2}$ pice per seer, so that even if the press be in full work they cannot expect to make more than Re. 0-7-0 or Re. 0-8-0 per diem. Tilli oil sells at about $3\frac{1}{2}$ seers per rupee, jagni 4 seers per rupee and gulli 5 seers and if the Teli buys the seed and sells the oil, he may expect to make at the most an anna or two per diem more than if he works his ghana for hire. Besides jagni, tilli and gulli the Telis press castor seed, kardu seed and karanja nut. Only about half the Telis in the district are oil-pressers. The rest are daily labourers or petty traders.

Oil-pressers.

122. The breeders of stock are gaolis of the Raniya tribe. The majority of this caste in the district are Nandbansis whose main occupation is agriculture. The Raniyas are found chiefly in the jungles of the north and west. Their system of breeding has been referred to in paragraph 61. They are almost always comfortably off and some are well-to-do with very large herds of cattle and she buffaloes.

Cattle-breeders.

The details given above of the condition of the non-agricultural castes have perhaps little connection with the principal object of this report, but I think they may be useful as an aid to officers in charge of the district, who may be called on to estimate the extent of impending distress in the event of a future famine.

123. The remaining classes to which any detailed reference is necessary are all connected closely with agriculture, their numbers may be divided into:—

Agricultural classes.

Landowners.

Their tenants.

Farm servants.

The bankers of owners and tenants.

124. Landowners are now known officially as malguzars (or men who make their living 'guzar' out of the revenue 'mal'), but amongst the people the old name of Patel is still in use. In Chapter IV of his Report Mr. Ramsay describes the Mahratta Revenue System as follows:—

Landowners.
Origin of their tenure.

"Under the old Mahratta Government the system was very similar to that now existing in the Bombay Presidency where the Ryotwari System of assessment prevails. Each village had its Patel or headman, who had certain duties to perform and enjoyed certain privileges in return. In the first place he had to collect the rents from the tenants and pay them into the Government Treasury * * * the Patel was supposed to receive an eighth of the gross collections for his share, but as owing to the uncertainty of seasons and other causes, the collections were precarious, and as all deficiencies had to be made good by him, the Patel seldom reaped the full inam that he was entitled to, and in fact was often involved in loss."

Mr. Ramsay goes on to explain that the office of Patel was not hereditary, but that if the Patel paid up the revenue punctually and discharged his other duties satisfactorily, the son generally succeeded his father and the office gradually came to be regarded as hereditary, the old established Patels distinguishing themselves with the epithet "Watandar." After a time it became the practice to allow the Patel to hold a field free of rent, and this made the office more valuable and was the foundation of the home-farm of the proprietors of the present day. The heavy assessments of the first thirty years of this century and the practice which prevailed, of making a settlement with the man who was deemed best able to pay rather than with the former holder of the village, resulted in the ruin of a number of the Watandar Patels and the introduction of outsiders.

Some of these were Telis and Kalars who by trading in jungle produce, selling liquor and money-lending, had enriched themselves at the expense of Patels and cultivators, but many were men of agricultural castes who were an acquisition to the district. Notable amongst these are the Hindustani Kurmis who came in at the beginning of the century from Unao and Lucknow districts and settled down in the best villages, the leaders as Patels and the followers as cultivators. At the 30 years' Settlement the proprietary right of Patels in their villages was granted or recognized, the right being declared in the absence of special circumstances in favour of the Patel found in possession. From that date until last year the villages have been the property of the Patels (or malguzars as they are now officially termed) with full rights of transfer. The amended Tenancy Act which has lately come into force contains provisions intended to ensure that the malguzar shall, even if he loses his village, retain a right of tenancy in his home-farm and not be thrown on the world absolutely without resources. Mr. Ramsay's Report contains a list which I give below showing the length of tenure by which proprietary right was determined in the 1,092 villages which were then included in the district :—

Tenure.		No. of cases.	
Prior to British rule	...	...	566
For period of first settlement, <i>vis.</i> , A. D. 1822	...	...	309
Do. of last do., do., 1837	...	...	91
Since last settlement and prior to 1850	...	...	39
Subsequent to 1850	...	...	87

Of the 87 villages in the last class 55 had been confiscated for complicity in the mutiny. This table shows that 875 out of the 1,092 villages or 80 per cent. were at settlement in the hands of families, all of which had held them during the period of over-assessment from 1822 to 1830, and the majority from the beginning of the century. This is an instructive fact as showing the resources of the district unaided by the money-lending classes of the present day. The statistics which I shall give below will, I think, when compared with these figures of Mr. Ramsay's, show very clearly that the grant of proprietary right has not improved the position of the agricultural community as a whole.

Malguzar's sources
of income.

125. It appears then that originally the Patels were little more than collectors of the revenue responsible for the payment of a fixed sum on account of each village and receiving as recompense a small percentage of the profits. Later they added to their income by cultivating a part of the village lands themselves. At first the percentage of assets left to the Patels was very small, but under the English Government their position has been steadily improved until they have now a right to receive not less than 40 per cent. of the assets as estimated, and in the case of poor estates the proportion of assets left to them is not infrequently as high as 60 per cent. In the assets of the village are included (a) the rent demandable from tenants, (b) the annual rental value of the land cultivated by the malguzar, (c) income from grazing grounds or jungle produce. All solvent malguzars have at least a small money and grain-lending business with their tenants from which they make some profit. The only other important source of income (excluding of course business entirely unconnected with their villages) which is enjoyed by malguzars is the payment of premia for valuable holdings which fall vacant. These are at the time of receipt entirely untaxed by Government and even under the provisions of Section 63 (3) of the amended Tenancy Act, a large proportion of the premia paid will ultimately remain in the hands of malguzars. Some idea of the amount of these premia may be gathered from the fact that the amount received since settlement in the Jawalkheda and Dahwa-Dunawa groups of the Multai Tahsil is stated at Rs. 29,030, or nearly as much the revised annual revenue demand of the two groups.

The profits enjoyed by a malguzar from his village are then derived from the undermentioned sources :—

- (a) A share of the rents paid by tenants varying from 40 to 60 per cent.

- (b) The profits of his home-farm minus a sum equal to 60 to 40 per cent. of the rental value thereof.
- (c) A share of the estimated siwai income (*vide* paragraph 231 for method of calculation) varying from 40 to 60 per cent.
- (d) Profits on money and grain loans to tenants.
- (e) A part of the premia paid by new tenants for vacant holdings.

In addition to this not a few have money-lending business outside their villages, on which the profits are in some instances very considerable. Although several of the individual estates cover a large area, notably those of the Shukul family at Shahpur and the Korkus of Chandu, they are not of great value lying for the most part in the jungle-covered tracts. No estates which lie in the fertile open villages include more than eight or nine villages. The list which I give below will afford some idea of the income from land of some of the principal malguzars of the district. The cultivating profits of sir land have not been estimated for all estates. The figures in column 3 include only the rental valuation of sir:—

Name of Malguzar.	No. of villages held.	Net profit including only rental valuation of the home-farm.	Cultivating profits of sir.
		Rs. a. p.	Rs. a. p.
Saheb Lal ...	9	5,654 8 0	Not calculated.
Ganga Bai Laxmi Bai ...	8	4,403 0 0	Ditto.
Kaliram of Chicholi ...	9	2,354 12 7	Ditto.
Amrit Rao of Baghora ...	9	2,820 1 0	Ditto.
Narain Rao of Baghora...	9	2,733 0 0	Ditto.
Shamlal of Shahpur ...	30	2,275 8 0	1,195 0 0
Rikhiram of Shahpur ...	28	2,379 0 0	777 0 0
Ganpat Ananda of Bakur ...	15	1,867 9 0	1,547 8 0
Ithal Rao Deshmukh of Nawapur ...	11	3,011 12 8	2,219 3 0
Raja Korku, Court of Wards Estate ...	19	2,226 0 0	974 0 0
Lalu, Korku, of Chandu...	15	1,464 3 0	1,625 11 0
Bisram, Korku, of Chandu ...	13	1,438 1 0	328 0 0

The total incomes of these men are of course considerably larger than this, including as they do, receipts from the other sources mentioned above.

126. The table below shows the castes and circumstances of the lambardars of the villages at the attestation of the village papers prior to assessment. The lambardar is generally, but not always, the principal sharer in the village:—

No. of malguzars.	Caste.	Number of villages held.	A.—Rich.	B.—Comfortably off.	C.—Poor or indebted.	Villages mortgaged.
4	God Mahadeo ...	6	3	1	...	...
95	Brahmins ...	206	44	29	22	5½
103	Kunbis ...	171	34	49	20	10
58	Kurmis ...	86	19	31	8	1
47	Rajputs ...	92	12	24	11	6½
15	Korkus ...	76	1	4	10	44
35	Marwaris ...	65	31	4	...	...

Castes and circumstances of malguzar.

No. of mal-guzars.	Caste.	Number of villages held.	A.—Rich.	B.—Comfortably off.	C.—Poor or indebted.	Villages mortgaged.
22	Bhoirs ...	45	16	6	...	...
32	Muhammadans ...	46	6	15	11	6½
30	Kirars ...	39	8	10	12	10
26	Gonds ...	38	3	16	7	2
21	Mahrattas ...	37	12	3	6	6
24	Kalars ...	41	8	10	6	3
18	Kshatriyas ...	42	...	15	3	2
7	Raghubansis ...	10	3	2	2	...
5	Dhusar Bantias ...	12	3	1	1	...
6	Bidur ...	11	3	3	...	...
25	Telis ...	38	3	9	13	7
24	Gaolis ...	33	4	12	8	...
3	Raj-Gonds ...	3	1	...	2	1
7	Sunars ...	10	2	4	1	...
4	Gosains ...	4	...	1	3	...
4	Malis ...	5	2	...	2	1
4	Bantias ...	9	4	...	...	...
3	Carpenters ...	2	2	...	1	...
1	Rangera ...	4	...	...	1	4
2	Katias ...	2	2	...	...	...
1	Arak ...	2	...	...	1	2
1	Kasar ...	1	...	...	1	1
1	Nahal ...	1	...	1	...	...
1	Darji ...	1	...	1	...	...
2	Kayasth ...	2	...	2	...	...
1	Bengali ...	1	...	...	1	1
1	Bairagi ...	1	...	1	...	...
1	Thatia ...	1	...	1	...	...
634	Total ...	1,143	226	255	153	113½
	Number of villages held by lambar-dars according to classes.	...	408	460	275	...

Generally malguzars of the Kunbi, Kurmi, Rajput, Bhoir, Kirar, Gond, Raj-Gond, Korku, Mahratta, Chhatri, Raghubansi, Mali, Gaoli, Arak, Katia and Thatia castes and Muhammadans are agriculturists who if they lend at all, do so only to help their tenants to sow their land or buy bullocks, while the Marwaris, Dhusar Bantias, Bantias, Sonars, Carpenters, Kayasths and many of the Brahmins are money-lenders by trade and have acquired their villages during the 30 years' settlement in the course of transactions with the former owners. There are, however, not a few men of Kunbi, Bhoir or other agricultural castes who have both a large money-lending business and extensive cultivation. Such are Sitaram Bhoir of Aoria and the Kunbi Patels of Baghora and Bakur. In collecting all the figures given in this section, I have considered these men as agriculturists and not money-lenders, as in most cases their money-lending business is based on success in agriculture and when they acquire landed property

in satisfaction of debt, they generally deal with it as agriculturists. About 70 per cent. of the lambardars are agriculturists, including under this designation all malguzars of the castes listed as such above. If we include only half the Brahmins amongst money-lenders this class furnishes the lambardars of 20 per cent. of the villages in the district. The remaining lambardars are men who do not belong to the agricultural castes and have no money-lending transactions outside their villages. They are nearly all Telis, Bidurs and Brahmins. In the table above, I have divided lambardars into three classes according to their circumstances. In class A, I have placed only those who have large estates and whose debt is not large compared to their assets. Nearly all these pay considerable income-tax on their money-lending business or trade. In class C, are included all those who are overwhelmed with debt; the villages of many in this class are mortgaged and their inability to save themselves from ruin is almost certain. The remainder fall in class B. Twenty per cent. of the villages are held by lambardars falling in class C, 45 per cent. in class B, and 35 per cent. in class A. Ten per cent. of the villages are mortgaged for heavy debt and are not likely to escape from the money-lenders.

127. In paragraph 124 I have referred briefly to the circumstances under which the principal castes now inhabiting it, came to the district, and have touched therein on the displacement of the early settlers by the Kalars and the Telis who were the traders and money-lenders of that day and are themselves being now displaced by the new generation of Marwaris and other traders. In this connection I give below some figures which show accurately the extent to which villages have changed hands during the 30 years from 1864 till 1894 :—

Transfers of proprietary right.

Number.	Name of Tahsil.	TOTAL NUMBER OF TRANSFERS IN DISTRICT.		Total number of whole villages represented by all transfers.	Total amount for which sold.	Government revenue of property sold.	TRANS-FERRED BY.			TRANS-FERRED TO.			Remarks.
		Whole villages.	Shares.				Money-lenders.	Agriculturists.	Others.	Money-lenders.	Agriculturists.	Others.	
					Rs. a. p.	Rs. a. p.							
1	Betul ...	60	190	127½	3,78,619 10 10	15,279 1 4¾	2½	86½	39	65½	48½	13½	The fractions are approximate only.
2	Multai ...	25	248	98¾	3,22,983 5 5	21,157 12 8¾	2½	60½	35½	58½	33¾	5½	
	GRAND TOTAL.	85	438	226	7,01,603 0 3	36,436 14 1¾	5½	146½	74½	124½	82½	19½	

In the statement in order to give a better idea of the extent of the total property transferred, I have added together the anna shares of villages transferred and divided the total number of annas thus obtained by 16; the quotient then gives the number of whole villages represented by the shares in question. The total of whole villages transferred is then 226 equal to 20 per cent. of the villages in the district. In this statement transferors and transferees are divided into three classes, according as they are agriculturists, money-lenders or others. The figures show that the effect of the transfers has been to reduce the property held at Settlement by agriculturist malguzars by whole villages and shares which represent a total of about 65 villages and that held by 'others' by about 55 villages: all this property which represents a total of 120 villages or 10 per cent. of the villages in the district had passed to the money-lenders between settlement and attestation; while they have lost 5 villages only. Nearly all the agriculturist transferees are malguzar's with considerable money-lending business as well as cultivators and acquired these villages in the course of money-lending transactions.

128. All but half-a-dozen of the transfers were made in satisfaction of debt either by foreclosure of mortgage, sale by the Court or private arrangement.

Causes of transfers.

Malguzars themselves are always very ready, especially in conversation with a Settlement Officer, to ascribe their want of prosperity to the unprofitableness of agriculture and the heaviness of the Government revenue demanded from them. They would point to the fact that 20 per cent. of the villages have changed hands for debt since settlement and that 20 per cent. more are now held by men who owe more than they are likely to pay, as corroborative of their complaints. But although of course some few malguzars have been ruined within the last 30 years by bad crops, cattle disease or other causes beyond their control, there is no doubt that the large majority of indebted or ruined malguzars might now be prosperous enough had they kept down their expenditure to a reasonable figure and not indulged in foolish efforts to live beyond their means in order that they might stand well in the eyes of their neighbours and caste-fellows. Frequent inquiries disclosed that to spend a year's income on a single marriage ceremony is common and marriage expenditure ranges from about Rs. 150 for a very small malguzar to Rs. 5,000 for the owner of half-a-dozen or more good villages. I could cite examples in which one particular act of extravagance or one family quarrel ending in an expensive law suit had plunged a malguzar into hopeless debt; these would however be the exceptionally bad cases and would not afford convincing evidence that the debt is as a whole due to want of thrift and good sense. But that this is so will I hope be shown by the facts and figures which I give below.

Connection between pressure of revenue demand and debt.

129. If the debt is due to the heaviness of the revenue, we should expect to find the smallest proportion of ruined and indebted malguzars in those groups in which the unrevised revenue falls at the lowest percentage on the unrevised assets and *vice versa*. These groups are Bhawargarh, Khaloti (Betul Tahsil) and Dhaba. The relevant figures for these three and for the whole district are given below:—

	Bhawargarh Group.	Khaloti Group.	Dhaba Group.	Whole District.
	Per cent.	Per cent.	Per cent.	Per cent.
(a) Increase per cent. in unrevised assets since settlement ..	135	196	146	34
(b) Percentage of unrevised revenue on unrevised assets in year of settlement.	12	15	21	48
(c) Percentage of villages held by indebted malguzars ...	9	16	24	20
(d) Percentage of villages transferred since settlement ..	5	16	20	20
(e) Totals of (c) and (d) ...	14	32	44	40

In the Bhawargarh Group all but half-a-dozen villages are owned by four well-to-do Brahmin families, and the circumstances of the group are therefore peculiar. In the other two groups despite the smallness of the revenue as compared with income, the debt is much the same as in the district as a whole, being in fact larger in Dhaba. The same figures for those groups in which the unrevised revenue fell most heavily on the unrevised assets are shown below:—

	Betul Group.	Dahwa-Dunawa Group.	Javalkhera Group.	Masod-Pattan Group.
	Per cent.	Per cent.	Per cent.	Per cent.
(a) Increase per cent. in unrevised assets since settlement ...	14	19	10	7
(b) Percentage of unrevised revenue on unrevised assets in year of settlement.	54	55	59	59
(c) Percentage of villages held by indebted malguzars ...	16	14	12	24
(d) Percentage of villages transferred since settlement ...	20	26	33	18
(e) Total of (c) and (d) ...	36	40	45	42

The percentage shown against side-head (e) is not so much larger in any of these groups than the similar percentage for the whole district that we should infer that the pressure of the revenue has as a rule anything to do with the debt of the malguzars. There are, it is true, some villages, most of which lie in the Atnar Group of the Betul Tahsil, and in the centre of the Multai Tahsil, in which, owing to the inability of malguzars to raise rents to a fair figure, the incidence of the revenue on assets, even at the close of the term of settlement, was so large that it is quite conceivable that the malguzars had to borrow to pay the Government demand. But these are exceptions and do not affect the general conclusion to which the figures which I have given above point.

130. The Dhaba Group supplies corroboratory evidence in another way also. The increase in the assets of this group since settlement is due almost entirely to the harra (myrabolam), which is found here in great quantity. Before 1873 there was only a small local demand for this nut for purposes of dyeing, and the malguzars as a rule made no income from it. In that year there was some demand for export which speedily increased till in a few years the crop began to contribute the greater part of the income in many villages of the group. In all 30 transfers of villages or shares of villages took place in this group after settlement, and of these only 4 were effected in or before 1873. The sudden access of wealth which followed on the opening of the foreign harra trade seems to have turned the heads of the malguzars. Even the Telis who are as a rule a thrifty caste more often in the position of the creditor than the debtor, launched out into wild extravagance in marriage ceremonies, pilgrimages, and what not in which the money-lenders knowing the enhanced value of their villages were only too ready to assist them. Then again we have it on Mr. Ramsay's authority (*vide* paragraph 124 above) that only 20 per cent. of the villages in the district changed hands during the 42 years from 1822 to 1864, although bad crops were not wanting during this period, and although with prices as low as $\frac{1}{3}$ rd the average of the last 30 years, the revenue demand was for a part of the time (the first 8 years) some thousands larger than at present. Moreover a large number of those transfers were due to forfeiture for complicity in the mutiny. Not having the same security to offer in those days before the grant of proprietary right the malguzar could not borrow so easily nor give the rein to their extravagance as they have been able to do since 1864. So that with a revenue very much heavier in proportion to value of the produce they yet lost no more villages in 42 years than they have in the last 30 years under much more favourable circumstances. The numerous instances in which one or two of the share-holders in a property have become indebted or lost their shares; while the others are still prosperous, are also significant of the fact that it is the disposition of the malguzar rather than the Government demand which affects his prosperity. Before passing to discuss the tenants of the district, I should like to give one or two instances of increasing prosperity among the agricultural landowners of the district. I will take the two most prominent examples which occur to me. Sitaram Bhoir of Aonria owned at settlement one-third share in three small sandy villages. He has now shares in 26 villages and 7 whole villages. The improvement in his circumstances is due to income from harra, the extension of sugarcane cultivation and a thrifty employment of his increased income. The Kunbi Patels of Bakur: they had at settlement a share in three villages, they have now shares in 12 villages and four whole villages, all acquired in the course of money-lending transactions which were based originally on the profits of cultivation. It is noticeable that the other half of the family holding exactly similar shares at settlement has acquired no property.

Facts which indicate that debt is due to bad management or extravagance.

131. The ideal malguzar is a man of the same caste as the tenants with sufficient capital to help them with seed and small money loans. This class of malguzar is sometimes liable to be slack in the collection of rents, but punctual collection of revenue will generally remedy this. It is doubtful whether a professional money-lender is not preferable as malguzar to an agriculturist without capital. From the point of view of revenue collection he certainly is. Because although his tenants are sure to become heavily in debt to him, Government can always get the revenue out of him, whereas in the case of the other, the tenants will have to resort to an outside money-lender for loans and payments to him will

Relations between malguzars and tenants.

seriously interfere with the collection of rent, while the debt will be nearly as heavy as in the money-lender's village. There are of course numberless ways in which a strong and unscrupulous malguzar can annoy his tenants but the following are the most usual—

- (1) collecting rent before it is due ;
- (2) taking excessive interest on arrears of rent ;
- (3) crediting payments made towards rent against debt ;
- (4) taking begar for various purposes, the principal of which are cutting timber and cultivating the home-farm ;
- (5) making them pay dues to cover the pay of the malguzar's havildars (bailiffs) or agents ;
- (6) curtailing the tenant's right to jungle fruits ;
- (7) exacting payments for *nistar*.

Nos. 2 and 3 are very frequently practised. During the progress of settlement operations tenants have been informed of the provisions of the Tenancy Act limiting the rate of interest recoverable on arrears of rent, and it may be expected that fewer will now unwittingly pay 25 per cent. interest where they need not have rendered more than 12 per cent. No. 3 is most frequent in villages held by professional money-lenders. Where No. 4 still exists it is often based on very old custom. We do not perpetuate it by a clause in the wajib-ul-arz, but the tenants recognize the malguzar's customary right to the labour and do not seem to grudge it to him although it sometimes interferes materially with their own cultivation.

Occasionally if the malguzar is an intruding money-lender complaints are heard. Nos. 5 and 7 are or were very common in the jungles of the north of the district. I hope the information given to tenants at inspection of their villages may put a stop to it. These malguzars expressly promised to abandon the practice, but whether they will do so without severe measures remains to be seen.

In almost all villages where there is much mahua, the tenants have a right to take the crop of a few trees each. Sometimes, particularly after transfer of a village, the malguzar attempts to possess himself of these trees. The last settlement wajib-ul-arz contained no record of these rights and the tenant's remedy lay in the Civil Court only. But in the revised wajib-ul-arz a note of the right has been entered, and as tenants are exceedingly tenacious of it and it can now be enforced under the provisions of the Land Revenue Act, it is probable that infringements of it will become rare.

I regret to say that the number of malguzars who do not indulge in any of these forms of oppressions is very few. There are however some who take no more than their due and live on perfect terms with their tenants, the most notable of these is Vithal Rao, the Desmukh of Nawapur.

132. Tenants with their dependents number 153,133 and are by far the most numerous of the four classes which are closely connected with agriculture. The Tenancy Act of the Central Provinces recognizes five classes of tenants, besides a sixth class who are proprietors of small plots within a village. The last-named class was created at the 30-year settlement at the same time that the proprietary right of patels was recognized. The classes of persons on whom proprietary right in their holdings was to be conferred, and the number of persons who were given this right, are stated in Mr. Ramsay's Report to be as follows :—

Title of Occupancy.			Number.
Old cultivators declared proprietors in the absence of better claims on the part of the proprietors	...	...	22
Claimants to shares holding land rent-free in commutation of their shares	...	...	3
Relatives of the proprietor holding land at favourable and fixed rates	...	...	11
Ex-Muafidars	...	...	203

To these may be added muafidars of plots who numbered about 73 at settlement. A few holdings have been added to this class at the settlement now made, to provide for the cases of persons who have during the term of the 30-year settlement taken land free of payment in commutation of their shares in villages.

These men are recorded as malik-makbuza muafidar malguzar. The area now held by plot proprietors is 9,805 acres divided between 412 holdings, of which 2,955 acres is held by muafidars.

133. On the subject of tenants proper I may begin by quoting Mr. Ramsay on the subject of tenant right under the Mahrattas:—

Tenure of ryots under the Mahratta government.

"He says in paragraph 101: Under the old Mahratta Government there is no trace of such a thing as tenant right or prescriptive rights of occupancy existing in this district under any terms except in the case of muafidars and grants of land for religious or charitable purposes. * * *

The original Mahratta system, however, included two classes of tenants, mirasdars, hereditary tenants who no doubt possessed a certain proprietary right in the soil, their tenure was more or less one of military service. I can find no traces of this tenure having existed in the Betul District. The other class of tenants were termed upris, literally strangers, and these were tenants-at-will without any rights."

Mr. Ramsay goes on to say that although these upris, who were the only class of tenants in Betul had no right to hold on fixed terms, and were re-assessed by the Patel with every fluctuation in the revenue demand, they frequently held the same land for several generations from father to son. The Patel of course had ordinarily no motive for ejecting a tenant, so long as he continued to pay his rent regularly. But when our Courts began to hold that 12 years was the minimum period which gave a title to hereditary occupancy, the tenants construed this as meaning that old-established cultivators had the right to hold for ever on a fixed rent quite independent of the will of the malguzar. This misapprehension operated to prevent the malguzar to a greater extent from passing on the enhancement of revenue to rents at the 30-year settlement, and accounts for the fact that the rise of rents immediately consequent on the 33 per cent. enhancement of revenue was only 5 per cent.

134. At the 30-year settlement four classes of tenants were recognized who were known as maurusi (occupancy), shartia-maurusi (conditional occupancy), mamuli (ordinary), khidmati (village service tenants). In the first class only those tenants were included who had been long settled on their lands. They were in fact men who, if the malguzar of the village had not also been of long standing, would have been recorded as plot proprietors. Some relatives of malguzars who preferred to remain in the position of tenants rather than take the share in proprietary right which was offered them, were also included in this class. The shartia-maurusi tenants were those who had established their right to protection by not less than 12 years possession. The village service tenants were village watchmen who held a small plot of land free of rent as part remuneration for their service, and with them may be classed the khairati-mauidars who hold free of rent by the favour of the malguzar. All other tenants fell into the mamuli class and were tenants-at-will; they could be ejected or their rents enhanced at the pleasure of the malguzar.

Tenures recognized at 30-year settlement.

135. It was not till the Central Provinces Tenancy Act of 1883 came into force that this last class of tenants was afforded any protection, and by the time this Act was passed, the position of the malguzars as against the ordinary tenants had become so strong that even now tenants of this class are in practice often ejected or their rents enhanced contrary to law. A suit in the Civil Court would of course rectify matters, but the tenant is often too poor or too much under the thumb of the malguzar to file it. This Act also abolished prescription as a means of acquiring occupancy right and provided that it should in future be acquired by purchase only.

Effect of Central Provinces Tenancy Act of 1883.

136. The malguzar and tenants of this district were under the mistaken impression that a cultivator who held from the malguzar on payment of half the produce of the land had not the rights of a tenant. It was therefore the custom for malguzars to let sir and khudkasht land to tenants on 'batai' in order that the malguzar might not lose his right of re-entry. The incidents of this tenure are that the malguzar supplies the land and the tenant everything else. The

Batai payment.

malguzar sometimes supplies seed also, but if so he charges interest on it, and the transaction is the same as that between a malguzar and a tenant paying cash rent. It was explained to the people during the progress of settlement operations that the batai tenant has all the rights of a tenant. The case of the 'adhelya' (*vide* paragraph 156) is different.

Effect of the
amended Tenancy
Act of 1898.

137. The same classes of tenants are recognized by the amended Act, but restrictions are placed on transfer of the occupancy and ordinary tenure, and it is provided amongst other things that ordinary tenants' rent shall be fixed by the Settlement Officer as in the case of absolute-occupancy and occupancy rents, under the old Act. Out of a body of tenants-at-will whose rents were fixed by the manager of the village and who were in every respect entirely at his mercy, we have during this century evolved a tenant class whose right to hold the land at a rent fixed by Government officers is carefully protected and of which a large section (the malik-makbuzas and absolute-occupancy tenants) have extensive powers of transfer.

Areas held in the
different tenures.

138. The areas held by the several classes of tenants now and at settlement (maurusi of settlement being the same as absolute-occupancy now and shartia-maurusi of settlement the same as occupancy now) are as follows:—

			AREA IN ACRES HELD.					Total ryoti area.
			Absolute-occupancy tenants.	Occupancy tenants.	Ordinary tenants.	TENANTS HOLDING RENT-FREE.		
						As grant from malguzar.	In lieu of service.	
Now	...	...	173,571	377,340	347,907	2,749	5,691	907,258
At settlement	...	...	237,172	119,376	353,211	40	4,849	714,648
Percentage on total ryoti area. }	Now	...	19	41	38	1	1	100
	At settlement	...	33	17	49	...	1	100

The figures in the first line are those of the year of attestation. Absolute-occupancy right has been lost in 27 per cent. of the area held in this tenure at settlement. This is of course no measure of the proportion of the area which has changed hands otherwise than by inheritance, and represents in fact only that land which has been relinquished or sold to the malguzar, and a small area, which was at settlement recorded in the name of a relative of the present malguzar in tenant right and is now held as part of his home-farm by the malguzar. An attempt was made to ascertain details of transfers of tenant right since settlement, but the figures are necessarily incomplete. Such as they are I give them for absolute-occupancy land below:—

Area sold.				Rent.	Price paid.	Price per acre.
Acres.				Rs.	Rs.	Rs.
15,299	...	...	...	8,761	1,82,483	12

The area held in occupancy right has increased 216 per cent. The greater part of this increase has taken place in the jungle tracts and is one of the most encouraging facts brought out by a comparison of the figures of last settlement with those of the present day. The right was acquired in nearly all the additional area in the 20 years from 1864 to 1883 when prescription was the only means by which it could arise. The provision of the Act of 1883 allowing purchase of the right by payment of 2½ years' rent have been taken advantage of to a very small extent. In some of the open villages tenants have paid premiums for land in

consideration of the grant of a lease securing the lessee's right to hold the land for ever or for the term of settlement on a fixed rent, and in such cases I have with the assent of the Settlement Commissioner recorded the land in the occupancy right, assuming that the deed though not couched in technical language, was intended amongst other things to secure a right of occupancy. Although these cases are fairly numerous in the best open villages of the central plateau, the total area thus added to the area held in occupancy right forms but a small proportion of the whole. The figures showing transfer of occupancy right by sale or foreclosure of mortgage since settlement are, I am afraid, still less complete than the similar figures for land held in absolute-occupancy right; they are as below:—

Area.	Rent.	Price paid	Price per acre.
Acres.	Rs.	Rs.	Rs.
8 749	4,912	78,902	9

The area held by the two protected classes of tenants has increased from 50 to 60 per cent. of the total ryoti area since settlement.

139. The castes and conditions of tenants are shown by the table below:—

Castes and conditions of tenants.

Name of Castes.	CLASSES.						Bariwalas.	Percentages.
	A.	B.	C.	D.	E.	Total		
Kunbis ...	173	918	5,048	939	373	7,451		22'1
Bhoirs ...	65	197	1,771	441	185	2,659		7'9
Malis ...	12	58	396	143	24	633		1'8
Kirars ...	71	158	841	198	52	1,320		3'9
Gaulis ...	25	229	1,469	177	212	2,102		6'02
Gonds ...	34	388	5,657	954	1,946	8,979		26'6
Korkus ...	7	152	1,522	232	629	2,542		7'5
Others ...	390	766	4,900	989	943	7,988		23'7
Total ...	777	2,866	21,594	4,073	4,364	33,674	17,414	
Percentage ...	2'3	8'5	64'1	12'0	12'9	...		

The division of tenants under the five letters A, B, C, D and E is made in accordance with the orders contained in Article 170 of the Settlement Code which recognizes five classes of tenants as follows:—

(A).—Well-to-do, lending money or grain, or owning land as malguzar.

(B).—In substantial cultivating circumstances, free from debt or with debt inconsiderable in proportion to assets.

(C).—In average circumstances with ordinary debt, but free from mortgage or special risk of losing the holding.

(D).—In reduced circumstances having fallen in the world and become deeply indebted or having mortgaged land.

(E).—Living from hand-to-mouth (nádár) such as Gonds or ryots without bullocks and of the status of day-labourers.

In this district where Gonds form a very large part of the population over large tracts of country, it was not possible to classify all cultivators of this caste

as E. Had this been done, it would have been impossible to compare the condition of different bodies of tenants in the Gond country. Moreover by no means all Gond tenants habitually live from hand-to-mouth, consequently in this district I have classed Gonds on the same general system as other tenants. In the jungle groups tenants with two or more ploughs have been put in the B class; ruined men in the D class; tenants with one plough and little debt in C class, and tenants without plough in the E class. The basis of classification was necessarily not the same in the jungle tracts as in the open villages. In determining what amount of debt was large enough to bring a tenant into the D class, I directed that if it exceeded ten times the rent paid, the tenant should ordinarily be placed in that class, but of course attendant circumstances sometimes indicated that this rule could properly be departed from, as for instance, where a tenant had borrowed a considerable sum shortly before attestation to buy tenant right in a holding, and it was found that he was paying off the debt in regular annual instalments from the produce of the holding, in this case he might be placed in the B or C class. Similarly, if the debt exceeded ten times the rent but the rent were very low, or if a tenant with a large holding paying, say, Rs. 50 rent only, owed a couple of hundred rupees, but was very short of bullocks, he would be recorded in the D class. The total number of tenants is overstated by the table above because tenants who have cultivation in more than one village appear in the statement for each village in which they cultivate, and have been included twice or thrice in the grand total. The A, B and D classes comprise almost all the tenants with cultivation in more than one village, and to approximate more closely to the true number of tenants, I would reduce the number of A's and B's by half, and the number of D's by quarter, getting a total of 30,835. The 'bari-walas' are people who have only a 'makka bari' or back-garden to cultivate and belong to the artizan or labouring classes. The aboriginal tribes (Gonds and Korkus) are the most numerous class of the agricultural population supplying 34 per cent. of the total number of tenants, but from the point of view of the Settlement Officer, they are not the most important, as they cultivate the poor lands, which pay only a small proportion of the revenue of the district. The Kunbis, the Bhoirs, Malis and Kirars are the largest rent-payers of the district, and the most indebted as well as the most prosperous tenants are found amongst them.

Condition of tenants of the best agricultural castes.

140. The number and condition of tenants belonging to these castes is shown below :—

Name of Caste.	Total of tenants belonging to caste.	PERCENTAGE OF TOTAL FALLING IN EACH OF THE DIVISIONS REFERRED TO IN PARAGRAPH				
		A.	B.	C.	D.	E.
Kunbis	7,451	2'0	12'5	68	12'5	5
Bhoirs	2,659	2'5	7'5	66	17'0	7
Malis	633	2'0	9'0	63	22'0	4
Kirar	1,320	6'0	12'0	64	14'0	4
Total	12,163	3'0	11'0	66	15'0	5

These castes are found chiefly in the open villages immediately surrounding Betul, and in all that part of the central trap plateau which lies in the Multai Tahsil.

Loans of seed-grain.

141. The majority of these men have one or two ploughs of land paying from Rs. 6 to Rs. 20 rent, and varying in area from 12 to 20 acres per plough, according as the land is all capable of growing rabi or sugarcane, or includes some of the poor soils fit for kharif crops only.

The majority borrow their rabi seed from the malguzar repaying in kind after harvest with 25 per cent. in the case of rabi crops, 50 per cent. in the case

of kharif, and 100 per cent. in the case of oil seeds, added for interest. Except in bad years these loans are generally punctually repaid with interest and no doubt after a bumper crop many tenants could, after paying off the debt, still produce themselves sufficient grain to sow their land in the succeeding year, and make themselves independent of the malguzar in this respect. But few do so: partly because they prefer to spend their surplus on marriage or other ceremonies or ornaments, and partly because it is recognized that a tenant who habitually borrows seed from the malguzar has a claim to receive seed from him in bad seasons on the usual terms of repayment in kind, even though this may involve some pecuniary loss to the malguzar. The interest paid on these loans amounts to about eight annas per annum on every acre of rabi land sown with borrowed seed, and about three annas on every acre of kharif. It is usual for the malguzar to set aside one or more grain-pits in the village in which the stock of seed-grain is stored, and he has by custom no right to sell any part of this stock which represents the amount required to sow the lands of habitual borrowers. In the famine year some malguzars could not resist the temptation to dispose of their stock of seed-grain for cash during the hot weather and rains of 1897, and this led to many complaints by the tenants. Others, though refusing to lend on the usual terms of repayment in kind, refrained from selling it to the dealers for cash down; and gave it to their tenants on an agreement to pay after harvest the cash value of the grain at sowing time with interest. Some few maintained the old system of repayment in kind with 25 per cent. interest and that any should have been found to do this, at a time when it meant such a substantial loss to them, shows, I think, the strength of this custom.

142. The majority owe some cash debt, the average per tenant of one or two ploughs being from Rs. 100 to Rs. 150. If the malguzar has sufficient capital he generally acts as their banker, allowing them to keep a running account of advances and repayments, in which the former too often exceed the latter; until eventually the tenant reaches the end of his tether and is sold up. If the malguzar is not in a position to supply the necessary funds, there are always professional money-lenders ready to satisfy the wants of the tenant in this respect. The information given in paragraph 107 on the subject of the cost of cultivation shows that in the absence of special disastrous circumstances the amount required to carry on the cultivation of rabi and kharif other than sugarcane is small, and purchase of bullocks or of land are in fact the only purposes connected with agriculture for which the tenant, if he does not cultivate sugarcane, borrows cash. But few tenants with one or two ploughs of land spend less than Rs. 80 or Rs. 100 on the marriage of a son and the average wedding expenditure for this class would certainly be nearer Rs. 150. If a man has three or four sons this totals up to a considerable sum. He gets little of it back in dowers for his daughters if he have any, as the greater part of the expenditure goes in eating and drinking and clothing. The statistics of debt available do not show for what purpose the loan was taken, but constant enquiries during the inspection of villages prior to assessment showed that debt could very often be traced back to what is according to European standards extravagant expenditure on marriages. Either the original loan which formed the nucleus of the existing debt was taken for a marriage, or it was apparent from the admissions of the tenant that had he not spent his surplus earnings on this object, it would not have been necessary for him to borrow at all. The case of sugarcane cultivators is different. The capital required for the growth of this crop is considerable and tenants generally work with borrowed capital. I shall further on give figures which show clearly what a large proportion of the debt amongst tenants of this district is to be traced to sugarcane cultivation. It was alleged by the malguzars of this district in an address presented to the Chief Commissioner on the occasion of a darbar in January 1895, that the prohibition of opium cultivation which used to be of some importance in the north of the Multai Tahsil had contributed largely to the indebted condition of tenants, chiefly owing to the fact that the high rents fixed on opium land cannot now be paid. The figures which I shall give in a subsequent paragraph will show how much truth there is in this assertion.

143. I give now some figures abstracted from the statements which were prepared for each village at attestation to show the debt owed by each tenant. Amount of cash debt.

This table will give some idea of the extent of the debt due in average villages of the open parts of the district where the area of sugarcane is moderate and the majority of the tenants belong to the castes now under description :—

umber of Villages.	Number of tenants.	Cash debt.	Grain debt in khandis	Value of grain debt.	Total.	Average per tenant.
		Rs.		Rs.	Rs.	Rs.
23	965	1,20,438	2,279	25,652	1,46,091	150

The current demand is excluded from the amount due on account of grain debt which represents only arrears on account of previous years.

Debt amongst sugarcane cultivators.

144. The most common causes of loss to sugarcane cultivators are death of bullocks, the falling in or drying up of the well, the appearance of 'aghia' in the field. If a man is working with his own capital, though he may be hard hit by any or all of these catastrophes, he is able to recover by giving up the cultivation of cane for a few years; but if he is working with borrowed capital, the money-lender will make him grow the crop year after year knowing that in that way only can he get his interest, until when the debt which has been added every year to cover the expenses of cultivation equals the value of the land, the creditor forecloses or gets the land sold at auction. As all the three causes mentioned above are of not infrequent occurrence, especially the first and the last, and as the majority of the cultivators have not capital of their own, it is not astonishing that debt is heavy among cultivators of the cane.

Effect of prohibition of opium cultivation on debt.

145. The cultivation of opium is described in paragraphs 154 to 158 of Mr. Ramsay's Settlement Report. Although the value of 'chic' was not much more than half that of the gur produced from a similar area under cane, it was much cheaper to cultivate than sugarcane and less liable to fail, and was therefore a more suitable crop for men of small means to cultivate. Moreover it was never attacked by 'aghia,' and could be grown successfully under a well that would not supply half the water required for cane, and it succeeded best on the 'geunra' land immediately round the village site, which will not produce cane fit to make good gur. In 1878 the cultivation of the crop was prohibited because many cultivators sold their crop privately although they were bound to dispose of it to Government under the terms of their licenses. The cultivator had then three courses open to him. He might put his garden under dry crops, vegetables or sugarcane. If he substituted either of the first-named crops for opium he was certainly worse off than before, but he at least avoided the ruin which was almost sure to be his portion if he put his opium land under sugarcane. I have already said that it is difficult enough for the small sugarcane cultivator to avoid ruin under ordinary circumstances, but if to the usual risk be added a habitually short water-supply and the choice of turning the crop into bad gur, which will fetch a low price, or selling it for seed, which will bring in little more net profit, it is quite impossible for him to save himself, and so many cultivators have found in the last 20 years. It is certainly astonishing that under these circumstances any tenants should have been found foolish enough to put themselves in this position, but that they did do so, is clear enough from the fact that out of the 39 villages of the Jawalkhera and Dahwa-Dunawa groups which grew most opium, 24 are now amongst those which grow most sugarcane. A great deal of the opium produced used to be bought up by Multai Banias on 'lawani' contracts, which involved a speculation on the outturn of the crop and the course of prices, and this involved some opium cultivators in debt. These men knowing that they could not pay it off without cultivating some garden crop, and seeing that the demand for vegetables is very small in the district, fell back on sugarcane. Others have wells, which in some years yield sufficient water for cane and in others not. Others thought they could supplement their existing water-supply by digging another well. These two classes often fell into the clutches of the money-lenders before they realized their mistake and continued to cultivate the crop only to save themselves from being immediately sold up.

146. The figures which I give below exhibit the effects of this state of things on the condition of tenants. The excess of the percentage of indebted tenants in opium villages over the normal percentage is largely due to the figures for those villages which having formerly grown much opium, now grow much cane. Examination of the statistics for individual villages shows that those in which the tenants have substituted wheat or vegetables for opium have less debt but still more than villages in which neither opium nor sugarcane was ever much grown. This is no doubt due partly to the fact that opium enabled the cultivator to live in better style than he could without it, and when the cultivation was stopped he had some difficulty in at once reducing his standard of comfort. Also by a combination of circumstances the money-lender's capital had been naturally attracted to those villages more than to others, and if the opium cultivator wished to keep up his style of living even without the crop, he found plenty of money-lenders on the spot ready to assist him. It will be gathered from what has been written above that I do not consider that the high rents fixed on opium lands at settlement have much to do with the debt of tenants who had opium cultivation. I shall show in Part II of this Report that this is so. The three groups for which statistics are abstracted in the statement below cover almost all the country in which sugarcane is largely grown and the whole of that in which an appreciable area used to be devoted to opium. I do not give figures for opium villages of the Betul Group, as the crop was of small importance there. It will be seen that the percentage of indebted tenants in all villages of these three groups varies from 15 to 18, while that in open villages ranges from 15 to 22 and in sugarcane villages from 18 to 24 :—

Statistics showing the effect of sugarcane and opium cultivation on the condition of tenants.

Classes.	CONDITION OF TENANTS IN—							
	Villages of Betul Group in which sugarcane is largely grown.	All villages of Betul Group.	16 villages of Jawalkhera Group in which sugarcane is largely grown.	17 villages of Jawalkhera Group which used to grow much opium at settlement.	All villages of Jawalkhera Group.	28 villages of Dahwa-Dunawa Group in which sugarcane is largely grown.	22 villages of Dahwa-Dunawa Group in which opium was largely grown at settlement.	All villages of Dahwa-Dunawa Group.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
A ...	6.2	4.6	6.3	4.8	3.3	6	3	4.2
B ...	14.7	11.7	11.2	10.9	11.7	6	6	6.2
C ...	56.8	67.2	46.7	51.8	55.0	59	68	65.6
D ...	20.7	15.0	24.2	21.8	17.7	20	15	14.6
E ...	1.6	1.5	11.6	10.7	12.3	9	8	9.2

147. A considerable proportion of those tenants of the castes which I have been dealing with, who have no cattle, lost them just before attestation either in an epidemic of cattle disease or through being obliged to sell them to support themselves in the famine. A number of these will acquire cattle again before long. I will now pass to the aboriginal tribes.

Want of cattle.

148. Mr. Ramsay describes the customs and tribal divisions of the Gonds at some length and has the following remarks bearing on the general condition of the Gonds and Korkus (*vide* paragraphs 79, 80 and 90 of his report) :—

Condition of tenants of aboriginal tribes at settlement.

"The Gonds are found in all the wild and jungle villages and also in some of the more open ones, where they live chiefly by manual labour in the fields, following the plough or tending cattle. The Korkus are almost entirely confined to a few talukas of the Saoligarh Pargana, which belong to a Korku proprietor, Genda, Patel. Some of the Korkus are very industrious in the cultivation of rice, a description of which I have given elsewhere, but the majority of them are very similar to the Gonds in character and disposition; these latter have no idea and no wish beyond living from hand-to-mouth, taking no thought for the morrow, and consequently obliged to put up with little food and scanty clothing. Their favourite mode of livelihood is by cutting grass and firewood, which they sell in the nearest market, but they also carry on a certain amount of agriculture, chiefly that method termed 'dahya' and which I have described in another place; they are thoughtless and improvident beyond measure and greatly addicted to drink, to obtain which they will put up with any sacrifice; on the other hand, they possess that great merit of rude and uncivilized tribes, *viz.*, truthfulness, which is developed in them to a remarkable degree * * * *

"Formerly the Gonds were the chief offenders in this respect (the commission of dacoities), but they have now been greatly reclaimed from their former habits, and now seldom break out into crime except under the pressure of want; as I have said before, they live entirely from hand-to-mouth, during the intervals of the harvest they subsist mostly on jungle produce, during seasons of failure they are utterly dependent on the bounty of the malguzar, and if the bountiful hand be withheld, want will necessarily drive the sufferer to extremes."

Improvement in
their conditions.

149. The Gonds and Korkus are still found in the same localities as at settlement, but although well-to-do men are still few, a marked improvement in their condition has certainly taken place and has been effected chiefly by the alteration in habits which was forced upon them by the prohibitions of 'dahya' cultivation soon after settlement. This method of cultivation involved continual migration from place to place in search of fresh forest to burn, it required no bullocks and no implements except an axe and apart from the fact that such an unsettled life precluded the possibility of their accumulating anything more than the indispensable minimum of property, the ease with which they obtained the small quantity of grain which with the addition of the wild products of the jungle, was sufficient to keep the life in their hardy bodies, always tended to increase their natural aversion to steady labour and thrift. No doubt when 'dahya' cultivation was first stopped a number of Gonds left the jungles where they could no longer support themselves without bullocks, and either took up their quarters in the neighbouring Jagirs where the rule was less strictly or not all enforced, or migrated to the open villages and made a living as farm servants or casual labourers, so that the first effect of this innovation was probably to intensify the difficulties of their life; but when those who remained found that they could not support themselves without steady hard work and a settled life, they began to throw off to some extent their migratory and indolent habits.

Number of plough-
cattle possessed now
and at settlement.

150. Unfortunately Mr. Ramsay does not give us any figures showing the number of plough-cattle in use in the Gond villages in his day, but from his description of 'dahya' cultivation in paragraph 141 of his report, it is clear that this was the favourite form of agriculture with the Gonds and Korkus and that bullocks were not required for it. We may, I think, gather from this that cattle were scarce amongst the jungle tribes in those days. The statistics of the present settlement show that out of a total of 11,521 Gond and Korku tenants 2,575 or 23 per cent. lack bullocks, the percentage varies from between 30 and 40 per cent. in the wild tracts included in the Khamapur, Bhowargarh and Tawa valley groups to about 10 or 12 per cent. in the villages of the southern ghâts and those which border the open villages of the central plateau. The greater number of the Gond and Korku villages were attested in the last half of the field season of 1895-96; that is, when the people had experienced the effects of a very unfavourable monsoon, which resulted in a very poor kharif crop and very short rabi sowings. They were therefore rather in a worse than in a better condition than usual at the time these statistics were collected.

Hired bullocks.

151. Those Gond and Korku cultivators who have no bullocks, generally hire them from the neighbouring Gaulis. If they hire trained animals they have to pay one khandi of kodon per bullock, but it is more usual for them to take young unbroken bullocks or bulls and train them while ploughing their land less; for these they have to give the Gauli only half a khandi of kodon per bullock or if they agree to castrate the bulls, nothing at all. The Gaulis in the north of the district are prohibited by caste rules from castrating bulls. If the tenant has sown any rabi land half the quantity of grain paid is rabi and half kodon. These men often hire their cattle late and their land is frequently very imperfectly tilled and sometimes a part of it lies unsown or is sown unseasonably for want of bullocks at the proper time. Some of them have only lately lost their bullocks, and a good many of them will no doubt acquire others before long, but the majority are men who have never owned cattle and habitually hire from the Gaulis. They are still very unsettled in their habits and are little better off than day-labourers. The value of a khandi of kodon may be put at Rs. 5-12-0 and of mixed rabi grain at Rs. 9, so that a tenant who hires a pair of trained bullocks and sows, say 15 acres of rabi or kharif, has to pay about Rs. 15 a pair of bullocks falling at Re. 1 per acre or probably about four times his rent. Even if

the bullocks be untrained the hire would fall at 8 annas per acre. The rate of hire paid for trained bullocks is little short of their value, if they be used for both rabi and kharif cultivation.

152. Few Gond and Korku tenants habitually get through the year without loan of food-grain (porga) from the malguzar. The loan is usually made at the d of the hot weather and lasts the tenant with the addition of mahua till the end August when the maize and bhadeli-kutki crops are cut. They generally sow own kharif seed, but often borrow rabi seed in the same way as tenants of open villages. They consider that they have a right to receive a loan of and seed-grain from the malguzar and if he refuses it, have a grievance anst him. The rate of interest for porga is 50 per cent. paid in kind at the vest and for the seed the same as in the open villages, *viz.*, 25 per cent. for rabi and 50 per cent. for kharif. But sometimes mahua is advanced for food on dition that an equal quantity of juari or even wheat is returned at the next

Loans of food-grain.

Heavy arrears of seed and food-grain are rare and I believe that as in the villages tenants could often by the exercise of a little thrift pay off the debt be free in future from the necessity of borrowing in normal years ; but for the sons given in paragraph 141 prefer to keep their accounts running.

153. Drink is the great curse of these tribes. If they only took their daily (even though it were a large one) the evil would not be so great, but on festivals and at marriages their craving for liquor induces them to waste substance in the most reckless way. It is not uncommon for a tenant in circumstances to spend Rs. 15 to Rs. 30 on this item alone at a marriage : it is mentioned that the mahua liquor costs at the most only two annas a bottle an idea may be formed of the amount of spirit which is consumed these occasions. The labouring classes and some of the poorer tenants pay their wives by 'lamjhana,' *i. e.*, serving their father-in-law for a term of five even years. But the majority of tenants falling in the C class spend from 50 to Rs. 100 on each marriage, generally borrowing it from the local ey-lenders at interest which is rarely less than 18 per cent. per annum and erally 24 per cent. Their clothing and ornaments are simple and cheap. A rse dhoti and blanket and a rag for the head is all they need to cover them, their ornaments are limited except in the case of exceptionally well-to-do sons, to a small silver or brass bangle for the men and zinc armlets and anklets the women. Both sexes hang chains of glass beads round their necks. nsidering the scale of their expenditure on marriages, it is clear that cultiva- in these forest-covered tracts is not so unprofitable as might be supposed. true that as described in paragraphs 98, 99 and 101 they make something of sale of jungle produce, especially timber, but at the best of times, earnings from this source are not more than enough to supply them with simple clothing and ornaments and their supply of salt. Were they com- thrifty, the effects of the famine as to which I shall have something to say on, would not have been so disastrous. The proportion of well-to-do and poor tenants in this class was at attestation (that is before the as below :—

Cash debt.

Tribe.	PERCENTAGE IN EACH CLASS.				
	A.	B.	C.	D.	E.
...	0'3	4'0	63'0	11'0	21'7
...	0'3	6'0	59'7	9'0	25'0
Total	0'3	4'7	62'0	10'0	23'0

154. The Gaulis of this district belong to two sub-castes—the Raniyas and Nandbansis. The former are essentially cattle-breeders, and if they cultivate l, have only a large makka bari, which they 'lepe' with moist cow-dung at

Gauli tenants.

the beginning of the rains and sowing the seed without ploughing, reap heavy crops of maize and the minor millets. They are found in the jungles of Bhawargarh and Saoligarh in the north of the Betul Tahsil. The Nandbansis are cultivators and inhabit the centre and east of the open sandstone country. In the east of this tract they have since settlement taken up with considerable success the cultivation of sugarcane: so much so that in a couple of villages the tenants have bought out an indebted malguzar. They are, as the figures below indicate, a thrifty body of cultivators. Most of the 212 persons shown in class E are Raniyas, without plough-bullocks, but with many head of unbroken cattle:—

Caste.	A.	B.	C.	D.	E.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Gaulis ...	1	11	70	8	10

The Raniyas though they have little cultivation of their own are not without importance from an agricultural point of view as they supply many of the poor Gond and Korku cultivators with plough-cattle on hire, and on this account, Gonds commonly call them 'Mahajan' or banker although their assistance is not often given in the form of cash. Statistics for the remaining castes have been abstracted separately.

Other cultivating cases.

155. Amongst the castes included in others, Maharas are most largely represented. They are bad cultivators and terrible drunkards, rivalling and think even excelling the Gonds in this respect. They are found all over the district, but are particularly numerous in the south of the Multai Tahsil, where they hold a considerable area of good land. Rajputs are scattered in small colonies through the open parts of the district. They are often heavily indebted chiefly owing to their extravagant habits. Raghubansis are confined to the north-east corner of the open trap plateau. They are generally good cultivators and prosperous, and hold some good land. Telis and Kalars hold a little land in many villages. They almost always combine petty trading with agriculture, and do not follow the plough themselves.

Tenants' income.

156. The figures given in paragraph 107 show that the net profit of a one-plough cultivator in an average open village, who employs no servant and does not grow sugarcane, would be about Rs. 80 per annum plus the wage of a farm servant or in all about Rs. 110. If he have a small cane garden his income is increased by about Rs. 50 or Rs. 60, but a part of this generally goes in interest on borrowed capital. The food of an ordinary household in the open country, where wheat and jau are the staple food-grains, would cost about Rs. 60 per annum. The one-plough cultivator of jungle villages earns Rs. 40 plus the wages of a jirati, or in all about Rs. 60 net profit. And to this they add by sale of jungle produce another Rs. 10 or Rs. 12. The food of a household in the jungle is chiefly kodon, kutki and mahua which costs about Rs. 40 per annum. There is therefore not much spare cash to waste in extravagant expenditure on social and religious ceremonies.

Sub-tenures.

157. Subletting on cash rents is not common, in fact the total area sublet by tenants and malik-makbuzas on these terms is only 15,119 acres. A considerable area is however sublet on batai and 'adhela'. The former of these terms is applied to a sub-lease when the tenant supplies the land and the seed and the sub-tenant the labour and bullocks, and it is agreed that the sub-tenant shall render to the tenant as rent half the produce after deducting seed and interest thereon. Where there is a good demand for land on sub-lease and where rents are not high, the sub-tenant often agrees to pay half the rent as well as more than half the produce. 77,828 acres is sublet on batai. Land is said to be sublet by an 'adhela' when the tenant supplies the land, the seed and the bullocks and the sub-tenant nothing but the labour, and the sub-tenant agrees to pay the rent plus half the produce after taking out seed and interest thereon. This is really a partnership in which one party supplies land and bullocks, and

labour, and both share equally in payment of rent and in the produce: and I have regarded it as such. The 'Bataidar' and the 'Adhelya' pay the fees of the carpenter, blacksmith and garpagari (the averter of hailstorms), and the tenant those of patwaris and kotwal.

158. The number of persons classified at the census under the head "Agricultural labourers on yearly and monthly wages" is 20,145, which at the district average of 5 persons per house would give about 4,000 houses. This would only provide one servant for every 25 acres of home-farm in the cultivation of malguzars themselves, and as many cultivators keep farm servants on a yearly wage, it is clear that the figures are not correct. Probably a large number of farm labourers on yearly and monthly wages were shown in the census papers as casual agricultural labourers. The farm servant on yearly wage is known as 'Barsalia' in the open villages and "Jirati" amongst the Gonds. His annual wage is—in the open villages, 4 khandis of mixed rabi grain, Re. 1 in cash, a pair of shoes value 8 annas, a couple of basketfuls of grain value about 4 annas; the khandi in which farm servants are paid contains 20 kuros of only 6 pailis instead of 8 pailis; total value about Rs. 26-12-0. In Gondi villages, 2 khandis of kodon, Rs. 10 cash and Rs. 3 worth of clothing: total value Rs. 20-8-0. Many cultivators with more than one plough keep one of these servants, particularly if they have sugarcane cultivation. Most of them are Kunbis or Gonds.

Farm labourers.

159. We come now to the last class closely connected with agriculture, *viz.*, the bankers. In the census returns bankers and merchants are classed together, but as all merchants in the district lend money as well as engage in trade, the number of this class may be taken to be 2,334 or about 400 houses as in the census report. In addition to these men there are a number of malguzars who have considerable money-lending business, and most lend something, if not much, to the tenants of their own villages.

Money-lenders.

160. Malguzars, if they have sufficient capital, always endeavour to supply the needs of their tenants, so as to keep professional money-lenders outside their villages, as they know that if one of these men once gets a footing in a village, his connection is liable to extend and the collection of rents becomes difficult. They are as a rule more lenient creditors than the professional money-lenders. Apart from the influence of public opinion to which their position exposes them, they have a stonger hold over their debtor tenant than the outside money-lender and have therefore less need to harass him by illegal means. The malguzar knows about what sum he would be able to realise as a premium on a lease of the holding of his debtor, and when the tenant's account reaches that figure, he withholds further advances. If the debtor has bullocks and can keep up a steady annual payment towards interest, he does not press for the repayment of principal on the expiry of the term mentioned in the bonds; but should the interest fall into arrears he takes steps to recover the debt. Frequently the tenant finding himself on his last legs and not wanting the bother of a suit gives the malguzar a deed of relinquishment of his holding, and the land is let to another tenant on an annual rent with a premium equal to the amount of debt due on it. I have referred to the grain-lending business of malguzars in paragraphs 141 and 152.

Malguzars as money-lenders.

161. Other money-lenders work very much in regular beats except a few of the largest firms. Almost all the large transactions in an area of 50 or 60 villages will be in the hands of a wealthy Bania, while the petty business of his circle is divided between a number of local usurers with a capital of only a few thousand rupees, who in their turn confine their operations to recognized areas. This class is in the jungle tracts generally recruited from the Telis and Kalars, who reside there for the purpose of their trade in jungle produce, and elsewhere from the well-to-do cultivators of the locality. These petty lenders often lend on very poor security and have to take an immense amount of trouble to realize very small sums. Their rate of interest is rarely below 25 per cent. If they are cultivators they not infrequently take a mortgage with possession in lieu of interest or more rarely in full satisfaction of the debt. In the former case the rupees are said to be 'munde' or 'bald,' in the latter 'duba' or 'sunk.' The business of the larger firms is generally with malguzars and tenants who grow sugarcane.

Other money-lenders.

Their methods of doing business with these two classes are different. If the debtor is a *malguzar* the banker is much less ready to grant time on a mortgage deed than if he be a tenant. The reason for this is that the creditor is quite capable of managing a village at a good profit and is after foreclosure in a better position than before, inasmuch as he receives the whole of the profits instead of only so much as he could annually screw out of the *malguzar*. But if he forecloses a mortgage in a tenant's holding, his position is not similarly improved: while the account was running he could always exact from the tenant by legal or illegal measures the greater part of his produce, leaving him enough to subsist upon and no more. If he forecloses he cannot cultivate himself and must put in a servant. Even if his servant does not swindle him, he cannot expect to get more out of the land than he got before, when the tenant, though he still had some small hope of saving himself from ruin and so worked better than a servant, retained nothing more than the subsistence which would have to be paid to a servant. It is usual for a tenant, with a sugarcane garden, who owes a heavy debt to make over the produce of his garden every year to the creditor. When he has once reached this stage his case may be said to be hopeless. He cannot sow another crop of cane without borrowing the price of seed, and if he ceases to sow cane, the money-lender, knowing that he cannot expect to realize the annual interest from the other crops, forecloses his mortgage. Sometimes when the money-lender thinks that nothing more can be got out of the tenant, he will turn the whole debt, principal and arrears of interest, into an instalment debt without interest; thus giving the tenant a last chance to pay off. The tenant is generally too far gone to recover at this stage, but he sometimes pays off the debt. After harvest, the bankers engage a number of town badmashes, dismissed *tahsil chaprasis*, &c., and send them round to extract what they can from the debtors by dint of intimidation or even force. It is not uncommon for the creditor to station one or more of these duns in the threshing-floor of a debtor to see that he gets no opportunity of removing any of the produce. This could of course be punished by a criminal court, but the debtor is generally too dependent on the banker to venture on a complaint, and if he does, fails to induce witnesses to depose to the facts. This kind of thing naturally does not endear the money-lender to the average tenant and he is always averse to exchange a *malguzar* of an agricultural caste for one of these men. So far is this the case that in more than one village, well-to-do tenants have lately formed themselves into a syndicate for the purpose of buying out some Bania who was threatening to oust their *malguzar*.

Money-lenders
and arrears of rent.

162. It very often happens that the tenant makes a payment to his banker before he has paid his rent and this practice is the cause of a large part of the arrears of rent, where they exist. When the money-lender lives near the village and the *malguzar* at a distance, even the strongest *malguzars* are defrauded of their rent in this way. I lately found a village belonging to the principal Seth of the district, in which the Gond tenants had all paid sums equal to two or three times the rent to their 'Sahukar' (a small Kurmi *malguzar* and money-lender of the neighbourhood) and not a pice of rent. If this will happen with Gond tenants, a weak *sahukar* and a strong *malguzar*, it will be easily believed that under more favourable conditions the practice assumes formidable proportions. The remedy lies in the hands of the *malguzars*, and I think that now that the higher demand of the revised settlement has to be paid, they will probably make use of the provisions of law designed to facilitate the collection of rents. Foremost amongst these is the order prohibiting sale or consumption of a crop till an arrear is paid (Section 24 of the Tenancy Act). I have never heard of any *malguzar* acting under this section. They commonly say that they are afraid that owing to ignorance of the law, they may lay themselves open to prosecution under Section 10 or 12 of the Act.

Attachment of
agricultural cattle.

163. It has been the custom for the Civil Courts to attach cattle in execution of decree as a matter of course without enquiry from the decree-holder as to whether they are agricultural cattle or not. Cultivators are often put to much loss in this way. A reference to the record of the suit would always show whether the judgment-debtor was an agriculturist or not, and if he be one, there is little doubt that all his bullocks are used for agricultural purposes and should

not be attached. By the time the judgment-debtor has made his objection and the cattle have been released from attachment, the mischief has often been done. I remember an instance in which a creditor had attached the well-bullocks of a sugarcane cultivator in the height of the hot weather with the result of course that his cane crop was absolutely ruined in a week long before the bullocks could be released. Since taking charge of the district as Deputy Commissioner I have directed that before attaching cattle the courts shall call on the decree-holder to prove that they are not agricultural cattle, if it appears *prima facie* that they are.

164. The prohibition of transfer of cultivating rights in sir will of course reduce the market value of proprietary rights in villages, but there can be no question that the malguzars will have no difficulty in raising all the money they can possibly require for agriculture. The position of absolute-occupancy tenants is unaltered by the Act. The credit of occupancy and ordinary tenants must be seriously affected by the loss of their powers of transfer: this will probably show itself by a rise in the average rate of interest as well as by diminution in the amount which bankers will be willing to advance. A tenant who would before have borrowed on security of his holding at 12 or 15 per cent. interest per annum, will now have to pay 18 or 24 per cent. on an unsecured loan, and so far as it acts in this direction the amendment does not improve the position of the tenant. I have shown in paragraph 107 that the expenditure involved in the cultivation of unirrigated rabi and kharif crops is very small, and the crops raised afford security sufficient to enable the tenant to borrow the small sum, required on this account. But his credit will not now suffice to obtain him the money required for extravagant expenditure on social ceremonies: and by compelling him to be more careful in this respect, the amended Act may be productive of as much good as by keeping the agricultural classes on the land. It may not be possible for every tenant who has heretofore grown sugarcane with borrowed capital, to continue to do so; but considering that numbers of tenants have as I have shown in paragraphs 144 and 145 been ruined by this cultivation, this is scarcely a matter for regret.

Effect of amended
Tenancy Act on
credit of agricultur-
ists.



SECTION VII.

FORMER FISCAL HISTORY OF THE DISTRICT.

165. Mr. Ramsay gives an excellent account of the former assessments and past fiscal history of the district and what I have written on this subject below is compiled from Chapter VII of his Settlement Report.

The last Mahratta
settlement.

Before the peace of Deogaon in 1803, the district was moderately assessed and the people sufficiently prosperous. But when the Mahratta empire was broken up, the Bhonslas in order to minimize as far as possible the sudden curtailment of their income, rack-rented the territories left in their hands, this district amongst the rest. The enhancement of revenue imposed on the Betul District amounted to about Rs. 80,000 or nearly 50 per cent. of the previous demand. This assessment was nearly half a lakh more than the district has been paying during the 30-years settlement, which has just fallen in. The difficulty of paying such a large revenue was enhanced by the unsettled condition of the district. Bands of Pindaries and other roving robbers looted the villages and laid waste the lands, and it is not surprising to read that it was often necessary to resort to violence to realize the Government demand.

166. When we took over the district in 1817 this assessment was again enhanced by about 16 per cent. The settlement was apparently hurriedly made before the British officers had had time to make proper enquiries into the

Our early settle-
ment.

character of the Mahratta assessments and the state of the district. It was not understood that the collections of the Mahrattas included many items besides revenue, and that actual collections were often not correctly shown in the accounts, consequently the great mistake was made of taking the average assessments of the preceding few years as the basis on which to found a new settlement. The demand fell even more heavily on the people than it would have done a few years previously, owing to the great fall in prices that took place at that time on the cessation of hostilities. It was found at once that the demand could not be collected, and very large remissions had to be made. In 1823 a new settlement was brought out, which fixed the demand at a sum 16 per cent. less than that of the Mahrattas at the time we took over the district, and somewhat less also than the actual collections during the preceding five years of English rule. Captain Low who made this settlement, writes "that the people were fully satisfied with it and that for the first year it was levied with ease, and that the remissions which had to be granted in the remaining two years of the term would not have been necessary but for bad crops." The next settlement was made in 1826 again by Captain Low for a period of 5 years. The demand was lowered by a few thousand rupees. Even then the revenue could not be collected in full. In 1830 it was found necessary to write off Rs. 92,000 of accumulated arrears. The average annual collections during these five years were only 75 per cent. of the demand. Captain Low's reports show that he was of opinion that the settlement of a tract like the Betul District must necessarily be of a fluctuating nature and that it would be impossible to fix a demand, however low, which should hold good for a term of years without modification. His assessment should therefore be looked upon as a sort of maximum standard which would only be realized under the most favourable conditions. These conditions were not present during the term of three or five years settlement, as the malguzar and tenants had been so impoverished by the heavy exactions of the Mahrattas and of our first settlements that they had been unable to regain the spirit and the means essential to profitable agriculture. Added to this the last three years of the 5-year settlement witnessed a general failure of crops. This 5-year settlement was the first to be based on any facts besides the record of previous revenue collections and the village rent-rolls. In his first settlement Captain Low had relied entirely on the latter, but before framing his second assessments he had the cultivated lands of the district roughly surveyed by the patwaris and based on the results of this survey a system of rates and produce estimates. The large remissions granted in 1830 seem to have persuaded the authorities that it would be advisable to afford the district a period of rest by means of a very light assessment, and give the agricultural classes an opportunity to recuperate. Accordingly in 1831 the settlement was revised and a demand 20 per cent. below that of the 5-year settlement was fixed for a period of three years. This assessment was based on the survey referred to above and on the village rent-rolls. The jamas fixed were calculated to leave the malguzar a profit of 25 per cent. This settlement worked well and the demand was collected without difficulty.

The
settlement.

20-year

167. Mr. Ramsay says in paragraph 221 of his report: "Hitherto (that is before 1831) the fiscal history of the district has been an uniform chronicle of high assessment modified annually, revenue realized with difficulty in spite of large and constant remissions, and a regular march of retrogression in the fortunes of the people: each succeeding year only serving to plunge them still deeper into difficulties and distress." In 1834 it was decided to make a 20-year settlement all over the Saugor and Nerbudda territories. The revenue of this settlement was arrived at by a regular percentage reduction on the existing jamas and the net result was a reduction of 12 per cent. on the total revenue. The demand of the 3-year settlement had been easily collected, but it was thought that as the district was to be re-settled for so long a term as 20 years, it was necessary to leave a larger margin to allow for the vicissitudes of the seasons and other contingencies. The mutiny prevented the punctual revision of settlement, and the demand remained unaltered till 1864, when Mr. Ramsay made the 30-year settlement, enhancing the revenue by 33 per cent. He says regarding the settlement of 1834: "The best proof of the success of this settlement is the present flourishing condition of the district; * * * * throughout the open parts of the district the whole of the culturable land has been brought under the plough; and

even in the wilder parts of the district great inroads have been made upon the domain of the forest."

168. The settlement concluded by Mr. Ramsay in 1864 was based on a survey with more pretensions to accuracy than any that had previously been made in the district. The measurement operations were commenced in 1855 under the supervision of a Deputy Collector: the survey was interrupted for three years by the mutiny, but was finally completed in 1862. On coming to the district Mr. Ramsay found that the changes which had occurred since survey necessitated a general check of the survey misals. He says: "I had the papers corrected and then felt myself justified in proceeding to assess upon the amended statistics." But from remarks in paragraph 336 of his report, I find that he had not much confidence in the accuracy of the records. He says: "The area (*i. e.*, reserved waste) so demarcated was computed from the entries of the numbers in the khasra; but in many cases the measurements are so faulty, and frequently the figures in the khasra bear so little affinity to the numbers as traced upon the map, that little reliance can be placed upon the mere figures; the real areas will not be properly ascertained until surveyed" (*i. e.*, after professional traverse and cadastral survey). That he realized the imperfect character of the records is shown by paragraph 7 of the report where he explicitly states that owing to the inaccuracy of the records he based his calculation rather upon general principles than upon figures and data recorded. The basis of the settlement was an estimate of the annual income that the malguzar should be able to raise from the village. This estimate was made by applying differential rent-rates to the soil areas as recorded in the survey misal. Estimates of produce and an estimate of assets by plough rates, were used to check the figures thus obtained. His report does not disclose on what principles he determined the percentage of estimated assets which should be taken as revenue, but it is evident from his remarks in paragraphs 243, 245 and 248 that he frequently found it necessary to depart from the results of his rates in order to avoid excessive *per saltum* enhancement or in some cases unnecessary reduction of revenue, so that the percentage of the proposed revenue on his estimated assets varied between wide limits. Before assessing Mr. Ramsay divided the district into 14 groups, each of which was again divided into two or three sub-divisions. The principles on which he formed these groups are stated in paragraph 250 as follows:—

"In framing chaks for assessment purposes, I have looked chiefly to the following points—situation, proximity to markets and means of communication; prevailing quality of the soil, and nature of crops raised; facilities for obtaining water either by means of wells or from streams; proximity to jungles and haunts of wild animals; nature of the agricultural population." A distinct set of differential soil rent-rates was applied to each group and to the 1st and 2nd class sub-divisions within the groups. In the 3rd class the poor jungle villages were placed. The rent-roll was apparently the principal guide to the assessment of these villages, in which the Settlement Officer considered it was impossible to estimate assets by the application of rates. The system on which Mr. Ramsay framed his rent-rates is briefly described in paragraph 240: "As regards the question of rates: in framing these, I have been in some degree guided by those existing in neighbouring districts as far as I have been able to ascertain them, and partly by what I have ascertained to be about the value of the different sorts of land from local personal enquiry as well as reference to the old reports on the subject as also leases given by muafidars or others."

His proposals enhanced the revenue of the district by Rs. 44,514 or 32 per cent. It was expected that a considerable enhancement would be imposed on rents by the malguzars, but as already stated owing to various causes the enhancement which malguzars were actually able to obtain was only 5 per cent. The actual percentage of revenue on assets was therefore even more variable than the estimate. In some cases the incidence of revenue on assets even at the end of the term of settlement was so large (notably in the Atner Group of the Betul Tahsil and some of the central villages of the Multai Tahsil) that it is difficult to avoid the conclusion that the malguzar must have found great difficulty in paying the Government demand. I give below a table showing the revenue demand and collections during the period from 1793 to 1864 as also a note of the

prices prevailing at the time of each settlement so far as these can be ascertained from Mr. Ramsay's Report or other sources :—

Term of Settlement.	Annual demand.	Collections.	Remarks concerning prices, &c.
	Rs.		
1793 to 1803	1,66,490	Said to have been realized in full without difficulty.	Wheat 32 seers per rupee. (Paragraph 170 of Mr. Ramsay's Report.)
1803 to 1816	2,46,649	No exact information, but a large percentage was never realized and force had often to be used.	Do. Pindaris and other robbers were laying waste the district.
1817 to 1822	2,86,580	Average collection Rs. 2,55,600.	1817 to 1819, do. do. 1819 to 1820, 16 seers per rupee. 1821 to 1824, 43 seers per rupee.
1823 to 1825	2,03,471	No exact details, but considerable remissions had to be granted in last two years.	1825, 64 seers per rupee; crops failed in the last two years of term. Levied with ease in 1st year.
1826 to 1830	2,00,510	Remissions every year, and Rs. 92,000 written off at end of term; a part of this, Rs. 92,000, was apparently on account of previous demand; average collection Rs. 1,84,898.	1826, 96 seers. Last 3 years of settlement saw failure of crops.
1831 to 1833	1,61,224	Demand generally realized without difficulty; the assessment was considered a very light one.	Seasons were more favourable. But much land was out of cultivation and many tenants had left the district when the settlement was made, especially in south of district.
1834 to 1864	1,40,000	No details, but apparently collected in full.	District prospered greatly under this settlement. No information as to prices when it was made. But in later years prices of wheat as below in seers per rupee.— 1857 ... 48 seers 1858 ... 24 " } Statement of cultivators. } As per Sadar List, } Do. do. or as per Settlement Report of Mr. Ramsay— 1854 to 1858 40 seers. 1859 ... 32 " 1860 ... 32 " 1861 ... 24 " 1862 ... 16 " 1863 ... 13 "
1864	1,84,514	No remissions till famine of 1896-97, when about Rs. 9,000 was remitted.	Vide paragraph on prices.

I will refer again to this table in Part II of the Report in connection with the revenue now fixed.

PART II.

ACCOUNT OF THE NEW SETTLEMENT.

SECTION I.

PREPARATION FOR ASSESSMENT—MAPS AND RECORDS.

169. I mentioned in paragraph 168 that the 30-year Settlement of 1864 was based on a survey by amins. The maps prepared by them were however not kept up to date and were in fact often so inaccurate that it would have been impossible without an entire re-survey to bring on to them correctly all the changes which followed on the increase of population and the development of the country. It was accordingly decided to include this district in the general scheme for re-survey of the agricultural lands of the province. Necessity for re-survey.

170. Under this scheme points on the boundary and within the lands of each village were fixed by professional traverse survey, and the details were filled in by patwaris with plane-table, chain and cross-staff. Traverse plots had begun to come in in 1888, and after some preliminary instructions the patwari staff under the supervision of an Assistant Settlement Officer (Mr. Kishen Prasad) and Inspectors, began work in the cold weather of that year. The whole of the malguzari area of the district amounting to 2,603 square miles had been surveyed and records prepared for it by the end of the field season of 1892-93. The want of sufficient traverse plots to employ all patwaris continuously, the failure of the traverse surveyors to make sufficient sub-traverses, and the indifference and even opposition displayed by a number of patwaris delayed the work much in the first two years, and throughout the whole period of five years malarial fever proved a great hindrance to the rapid completion of the survey. The progress of the operations is shown in the table below:— The new settlement survey.

Year.			Area surveyed.	Area for which records prepared.
			Square miles.	Square miles.
1888-89	...	...	92	31
1889-90	...	...	405	313
1890-91	...	...	582	459
1891-92	...	...	793	1,007
1892-93	...	...	731	793
Total			2,603	2,603

In May 1891 Mr. Kishen Prasad was relieved by Mr. Lancaster, Assistant Settlement Officer, under whose supervision the survey was completed. The establishment employed consisted of one Assistant Settlement Officer, a staff of Inspectors, varying at different stages of the work from 13 to 17, and 174 parwaris. Also for the last six months the services of a Superintendent of Land Records were placed at the disposal of the Assistant Settlement Officer. Until the last year patwaris were employed only in their own circles, but in that year 20 patwaris who had completed their own circles were employed as assistants in some very large circles. They cost Rs. 1,777. Each Inspector checked the work of 10 or 12 patwaris, and one District Inspector assisted the Assistant Settlement Officer in

testing the work of patwaris and Inspectors. The amount of checking done by the supervising and inspecting establishment is shown below :—

Year.			Total number of fields surveyed.	Number of fields checked.	Percentage on total.	Length of chains run by checking officers.
1888-89	...	...	10,527	7,437	71	10,006
1889-90	...	...	72,420	29,734	41	29,567
1890-91	...	..	65,040	36,812	56	26,464
1891-92	...	..	60,857	29,029	47	26,601
1892-93	...	..	57,715	19,023	33	20,497
1893-94	...	..	.....	.....	....	.....
Total			266,559	122,035	45	113,135

The amount of checking effected was therefore very large, and the result is an accurate survey. The experience of attestation showed that except in a few villages lying in hilly forest-clad country, where the use of plane-table and chain is particularly difficult, errors in mapping are very few.

Records.

171. The manner in which the village records are prepared at survey is clearly explained in the Central Provinces Settlement Code, and there is no need to say much on this head here, though in dealing with the subject of attestation some reference will be made to the various papers which compose the survey record. When the survey of a village was approaching completion the Inspector ascertained by enquiry and reference to the old records the name of the holder of each field with the right in which he held it. The patwari then prepared the khasra or list of fields and jamabandi or rent-roll on the basis of the map supplemented by the results of the Inspector's enquiries. The records were not prepared so accurately as the maps, and the subsequent check afforded by attestation before assessment was necessary. The land was also classed by patwaris under the direction of Inspectors, but soil classification is too difficult a subject for the average patwari, and as the Inspectors could not give sufficient time to it, the soil lists had to be prepared again by the settlement staff before assessment. The operations described above were taken in hand during the open season from the middle of October to the middle of June every year.

Office work.

172. The remaining four months of the year were occupied in the inking of maps, which were drawn in pencil in the field, the calculation of areas, and the completion of the record. Temporary clerks paid by the piece were employed for the map inking, and area calculation under the supervision of the Inspector staff. In 1891 it was discovered that owing to the slackness, and possibly with the connivance of some Inspectors the area calculators were evading the system of double workings which should have provided a sufficient check on the accuracy of their figures, with the result that their work was fudged and incorrect. This was followed by the punishment and dismissal of Inspectors and the substitution of Mr. Lancaster for Mr. Kishen Prasad with satisfactory results.

Cost of survey.

173. The cost of the survey was Rs. 88,097 falling at Rs. 33-13-1 per square mile. The expenditure on the professional traverse was Rs. 62,472 or Rs. 24 per square mile. Total cost of survey and traverse Rs. 1,50,569 falling at Rs. 57-13-1 per square mile.

SECTION II.

ASSESSMENT GENERAL.

Commencement of
settlement oper-
ations.

174. The Betul District as it now stands includes 85 villages which were transferred from Chhindwara some few years after settlement. The settlement

Determination of
revenue.

177. The revenue to be taken from the malguzar of the village is determined by applying to the assets a percentage which ordinarily varies from 50 to 60, but may for special reasons be as low as 40 or as high as 65. The assets are:—

- (a) the revised payments of tenants ;
- (b) the annual rental value of sir, khudkasht and holdings of privileged tenants ;
- (c) the income from other miscellaneous sources known as siwai.

The principal points of difference between this system of assessment and that adopted by Mr. Ramsay may be briefly mentioned. Mr. Ramsay arrived at an estimate of the assets of a village by applying to the occupied lands differential acreage rates which were the same all over a large area of more or less homogeneous villages. The new system enables us to use different differential acreage rates in every village if necessary. Mr. Ramsay had no means of comparing accurately the real pressure of existing rents per acre in different villages. The system of soil factors provides the necessary means to this end. Mr. Ramsay's assets were estimates only : ours are actuals except in the case of the valuation of home-farm.

SECTION III.

LAND CLASSIFICATION AND VALUATION.

Method of deter-
mination of soil
factors.

178. The system of land classification and the manner in which the classification was applied in practice have been described in paragraphs 16 to 26. The Settlement Code directs that in fixing the soil factors, which express the relative value of the soils, attention shall be paid to:—

- (1) a careful analysis and comparison of the rents paid in various villages, with a view to ascertaining the points of agreement between the rents of holdings of a homogeneous and the points of difference between rents of holdings of a heterogeneous character ;
- (2) the statements of intelligent malguzars and ryots ; and
- (3) the results of crop experiments as bearing on the net productiveness of soil.

Rents are paid always on the holding and not on the field, and a holding consisting of one kind of soil is rarely found except in the poorest villages, where cultivators sometimes have nothing better than bardi or retari in their holdings. As a rule so many classes of soil are included in a holding that little can be learnt regarding the comparative value of different soil classes, by a consideration of the difference in rental incidence of different holdings. Little use could therefore be made of acreage rates in this connection. Much useful information was collected from malguzars and tenants. Though people of the cultivating classes are often reluctant to enlighten the Settlement Officer as to the actual productive capacity of land, they are more ready to disclose their opinions regarding the comparative productive qualities and cost of cultivation of different kinds of soil, and this was all that was required for the fixation of factors. Enquiries were made every day of the field season of 1894-95 in the course of village inspection, and the information thus obtained was supplemented by the opinions of representative cultivating malguzars from all parts of the district who attended a meeting held for the purpose at the beginning of the rains of 1895.

The crop experiments made before 1894-95 were of no use for our purpose, as the registers did not show the correct soil classification. A number of experiments were made in 1894-95 by the officers of the Settlement Department, and although they were too few to be of much use by themselves they afforded

of those villages which formed part of Betul in 1864 fell in on the 30th June 1894: that of the transferred villages on the 30th June 1897. Owing to want of officers the revision of the assessments could not be taken up in time to get out the revised rents and revenue before the term of the 30-year Settlement expired and that has run from 32 to 35 years in different parts of the district. The district was placed under Settlement by Gazette Notification No. 1354, dated 15th March 1894. A Settlement Officer was posted to the district in September 1894, but the full staff was not collected and the operations were not fairly begun till November in the same year.

175. The settlement now made differs fundamentally from all preceding assessments in that the rents of absolute-occupancy and occupancy tenants (and practically of all ordinary tenants except those paying a rent which though fair is higher than the rent deduced by the Settlement Officer) as well as the payments of malguzars and plot-proprietors, have been fixed by the Settlement Officer on principles which are enunciated in detail in the Central Provinces Settlement Code. This change in the scope of the settlement was the consequence of the change in the Tenancy law of the province effected by the Act of 1883. Accuracy of measurements and soil classification became then much more necessary to a successful settlement than under former conditions. When the unit of assessment was the village, plus and minus differences, which might now result in the over-assessment and ruin of individual tenants, cancelled out and did not prevent the fixation of a fair revenue on the mahal. A correct survey was therefore essential to a successful settlement.

Difference between methods of new settlement and all preceding ones.

176. The Settlement Code and Mr. Fuller's Report on the Damoh settlement contain a complete exposition of the principles on which the assessments are made and I need only recapitulate the prominent features of the system. Having secured an accurate survey and classification of the soil the next step is to express the relative value of the various soils differentiated in the classification by means of numbers bearing the same proportion to one another as the net productive qualities of the soils to which they are applied. These numbers are termed 'soil factors' and the units of which they are composed 'soil units.' By multiplying the area under each class of soil in the holding or village by its factor and dividing the rent by the resulting figure, the average incidence of rent per soil-unit is obtained. Similar average incidences are calculated for groups of homogeneous villages. The average incidence of rent per acre in this area is compared with that of settlement, after making allowance for the occupation of land below the average of that occupied at settlement. Then by raising or lowering the unit incidence in the same proportion, the incidence per soil-unit at settlement is deduced. The existence of a different and less complex system of soil classification at settlement prevents the calculation of this incidence in a more direct manner. The percentage by which on the score of the rise in prices and general considerations, it would be justifiable to raise the settlement soil-unit incidence, is then determined. The figure obtained by raising the unit incidence by this percentage is the standard incidence per unit to which the incidence of the group should approximate after revision of rents and is known as the standard rate. The unit-rates of individual villages are then fixed in a similar way, the standard for the group being borne in mind and deviations from it, though of necessity frequent, requiring justification. By multiplying the soil-units in each holding by the village unit-rate we obtain the rent, which is justified by statistical considerations. This is however not necessarily the rent adopted by the Settlement Officer. If the present rent be higher than the deduced rent it is allowed to stand unless it appears that it cannot be paid, or if any actual payment by a sub-tenant shows that the deduced rent is unnecessarily low, a higher rent may be fixed. On the other hand in order to avoid an excessive *per saltum* enhancement or to afford an indebted tenant an opportunity of recovery, a rent lower than the deduced rent may be, and very often is, fixed by the Settlement Officer. Lastly, deductions are made from the deduced rent to allow for improvements effected by the tenants. The value of the sir and khudkasht land and the holdings of privileged tenants is similarly fixed. So much for the system on which the revised rents are determined.

Brief statement of the principles on which the settlement has been made. Rent fixation.

a basis for the discussions with cultivators and a means of checking their statements to some extent. The time available in which to form definite opinions on this subject was very short, and a bad attack of fever which incapacitated me for field work in February, March and part of April 1894, and the loss of one of my Assistants (Mr. B. Jagannath) owing to ill-health at the end of the field season of that year, did not make it any easier to arrive at correct conclusions. But the experience gained in the Chhindwara settlement was of much use as a check on the results of enquiries in this district. And I have since seen no reason to consider that the general scale of factors finally adopted required any alteration except perhaps in the case of sugarcane and irrigated vegetable garden land of which our classification was, I think, unnecessarily elaborate, and good soil in the geunra position which we valued too low. Moreover, although the system of classification did not necessarily involve an assessment on crops since the record of land as santa-bari or sarkari-bari would be only an indication of the quality of the water-supply, in fixing factors of these soils the special value of the crop as well as that of the water-supply was taken into consideration. It was on this account necessary to allow drawback on the deduced rent of those gardens which are not at present growing sugarcane.

179. The scale of factors proposed and the facts on which it is based are set forth in the preliminary report for the Betul and Multai tahsils, and the orders passed thereon by the Settlement Commissioner and Chief Commissioner. The general scale of factors adopted for the different classes of soil in the normal positions were as follows:—

General scale of soil factors.

Soil.	Wheat land.	Minor cropped land.	Sugarcane garden land (always irrigated).	Unirrigated vegetable garden.
Kachhar ...	40	....	65	40
Kali II ...	36	20	65	34
Morand I ...	32	20	65	34
Morand II ...	24	14	55	24
Mutbarra ...	16	8	45	16
Sihar ...	14	8	45	16
Bardi ...	.....	4	... ..	8
Retari ...	.....	3	.....	8

This was the general scale of factors sanctioned for the district as a whole. Alterations and additions were made to the scale where the circumstances of particular groups appeared to require it. The most important of these alterations were:—

- the raising of the minor crop factors in the two Khaloti groups below the ghâts where the cropping is similar to that of the Nagpur and Berar plain, and valuable kharif crops are grown;
- the lowering of the wheat factors of morand I and II in the Tawa valley groups, where all the morand is more or less mixed with sand;
- the addition of a second sihar mutafarikat class in those groups for the reasons stated in paragraph 23;
- the addition of a factor of 35 for retari santa-bari in the Chachundra and Aonria-Bordhai groups where cane is not infrequently grown on retari.

The same general pitch of factors was adopted as in the Nagpur and Chhindwara settlements, *i. e.*, an arbitrary factor of 32 for morand I gohari mamuli was taken, and the other factors deduced from it. This is advantageous as making possible an effective comparison of revised rents fixed in these districts and in Betul. It is a sufficiently large number to give ample scope

for differentiating the soils of inferior value. It will be noticed also that the scale is convenient in another way, inasmuch as the acreage rate, brought out with a unit-rate of 1'00 on the most largely represented soils are:—

	Rs.	a.	p.
Morand I Gohari Mamuli	...	2	0 0
Morand II „ „	...	1	8 0
Mutbarra „ „	...	1	0 0
Mutbarra Mutafarikat	...	0	8 0
Sihar „	...	0	8 0
Bardi „	...	0	4 0
Retari „	...	0	3 0

Positions of general application.

Modification in factors to allow of difference in position.

180. *Geunra*.—This is, as already explained, the land near the village-site. To bring out the advantage of this position percentages were added to the ordinary factors, the percentage varying from 9 in the case of the best sugarcane land to 100 in the case of the poorest minor crop land. In the case of irrigated wheat and vegetable garden land the percentage was added to the factor for land of that class and not to the ordinary factor.

Irrigated.—A percentage varying from 25 in the case of the best wheat land to 33 in the case of the poorest vegetable garden land was added to the ordinary factor.

Wheat land positions.

Tagar.—Percentages varying from 25 in the case of the best soil to 20 in the case of the poorest were deducted from the ordinary factor.

Bharkila.—In this case the percentage deducted ranged from 50 to 40.

Kohli.—66 per cent. was deducted from the ordinary factor of all soils to allow for this defect.

Dol.—This is an advantageous position, and the factors were obtained by adding percentages ranging from 25 in the best soils to 30 in the poorest.

Sugarcane land.

In determining the normal factor for sugarcane land allowance was made for the fact that sugarcane is grown in rotation on different parts of the plot below the well, and the factor was fixed on the assumption that the crop was grown on a three-years' shift. In the case of gardens where the shift is longer, the factor was reduced proportionately to the increase in the length of the shifts. But it was not reduced below the figure arrived at by this method for 5 shift gardens, because that figure was but little higher than the factor for irrigated wheat land, and land which is habitually placed under cane is *prima facie* more valuable than the same land under wheat.

Number of different factors involved in the classification.

181. I append below a complete statement of the ordinary scale of factors sanctioned for the district. It will be seen that there are 43 distinct numbers in the scale, which, even if every village rate were the same, would give 43 distinct rent-rates. The village rates vary from '30 to 2'00. Rates above 1'00 have been rarely used, but from '30 to 1'00 every multiple of 5 has been frequently applied. There are 15 multiples of 5 within these limits. If every one of these 15 unit-rates in frequent use were applied to each of the distinct soil factors 645 distinct acreage rates ranging from one anna per acre to Rs. 4-6-0 per acre would be the result. The number of acreage rates actually used was probably somewhat smaller than this, because to obtain this number of rates, it would be necessary that every soil class with a distinct factor should be represented in at least one village to which each distinct unit-rate has been applied and it is unlikely that this is the case. Still it must be admitted that the scale of factors together

with the system of village unit-rates allows ample scope for differentiation of acreage rates :—

Soil Classes.	WHEAT LAND (GEUNHAR).										GARDEN LAND.										MINOR CROP LAND.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
Kachhar	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
Kali II	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
Morand I.	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
Do. II.	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
Mutabarra.	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
Sihar	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
Do. II	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
Bardi	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
Retari	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				
	Ordinary.					Bhar-kila.					Dol.					Irrigated, Ordinary.					Irrigated, Ordinary.				

Comparison of
classification now
made with that of
settlement.

182. I will conclude this section with a table comparing the soil classification now made with that of settlement. I have considered that khardi of settlement was what we now call mutabarra. Mr. Ramsay had only one class of morand and recorded all sand soils as retari. The figures for last settlement are for the occupied area and for this settlement for the cultivated area only (*i. e.*, cropped and current fallow areas) :—

Soil Classes.			AT LAST SETTLEMENT.		AT PRESENT SETTLEMENT.	
			Area.	Percentage on total.	Area.	Percentage on total.
			Acres.		Acres.	
Kali I	...	...	54 002'19	6'8	...	...
Do. II	...	...	103 954'29	13'2	6,650'23	7'07
Morand I	...	...	204 098'53	25'9	68,107'53	7'9
Do. II	...	...			157,710'44	18'4
Total Good soil	...	...	362 055'01	46'0	232 468'20	27'1
Mutabarra Khardi	...	..	117,429'92	14'9	152,321'96	17'8
Sihar	...	..	...	...	72,192'60	8'4
Retari	...	..	26,928'87	3'4	67,429'98	7'8
Bardi	...	...	230,260'37	35'6	330,985'45	38'6
Kachhar	...	..	...	...	27'53	...
Total Poor soil	...	...	424 619'16	53'09	622,957'52	72'8
GRAND TOTAL	..	..	786,674'17	...	855,425'72	...
Geunra	...	...	13,839'69	1'7	24,819'29	2'9
Irrigated	...	...	13,262'74	1'6	30,647'91	3'5

SECTION IV.

ATTESTATION AND INSPECTION.

Necessity
attestation.

183. When the Settlement Officer was posted to the district, the survey had been completed and maps and records were in the office. But assessment could not be taken up until the survey map and the records of the current year (on which assessments would be based) had been checked and corrected where necessary. This process, which is known as attestation, has formed a part of the operations in all districts of which the 30-year settlement has been revised. Apart from the necessity for eliminating as far as possible all errors from the record, a careful check of the papers before assessment was necessary to ensure that the maps and records of survey had been brought up to date. The villages which were earliest surveyed, were completed so long ago as 1889, and a year and a half had elapsed since the maps and records of even the latest surveyed villages were completed. In many villages of the district the soil is chiefly of a very poor character and cultivation shifts about over the holdings from year to year. New land is also continually being broken in many of these villages. So that if the maps and records are always to represent the facts correctly, the patwari must be continually on tour in his circle and be carefully supervised by the superior officers of the Land Record Establishment. Until the survey of a circle was completed, the existence of these conditions could not be secured. As soon as a circle was completely surveyed, the patwari should have brought the maps and papers of all his villages up to date. But many of the patwaris of this district are not to be trusted to work properly without close supervision, and the demands of other uncompleted circles on the services of Inspectors and the Assistant Settlement Officer in charge, necessarily operated to reduce the amount of supervision to which the patwaris of completed circles were subject, with the

result that the records were not properly kept up and there was much to be done in this direction when settlement operations began. Another matter supposed to be completed at survey, but which must always, I think, demand a good deal of attention from the Settlement Officer and his staff, is the classification of soils. I have already said, paragraph 17, that this subject naturally received less attention at survey than other matters, more important from the survey officer's point of view. And this of course made the careful check of soil classing imperative in the present instance, but the details of soil classing are so much a matter of opinion that as long as the Settlement Officer is responsible for the correctness of the record in this respect it must, I think, always follow that he should alter a good deal of the classing effected under the orders of the survey officer. These two subjects alone would provide a sufficient reason for a close check of the maps and records, in addition to the inspection, which would be necessary in any case to enable the Settlement Officer to determine the extent of the enhancement, if any, which a village is able to bear.

184. The Inspectors on the regular Land Record Staff of the district together with the additional Inspectors appointed for the term of settlement, were distributed as follows— Distribution of staff for purposes of attestation.

Two or three under the supervision of the Assistant Superintendent of Land Records (known as the Assistant Settlement Superintendent) looked after the ordinary land record work in those parts of the district in which the field work of settlement was not actually going on.

One Inspector was kept in office. Five or six Inspectors were allotted to each Assistant Settlement Officer and 3 to the Superintendent of Land Records for attestation purposes, one acted as Reader (commonly called Peshi Inspector) of the Settlement Officer. The number of Inspectors employed varied from time to time, but the normal number employed in the field season during the progress of attestation was about 20.

185. The procedure followed in attestation was as follows. The Inspector visited the village first and checked in the field the details of rent, right, possession, cropping and soil classification of every khasra number. He also made enquiries on certain subjects on which information was required for assessment purposes. At the beginning of the season the Inspector did not complete one patwari circle before beginning another, but took up villages in which he found the khasra ready; but as patwaris completed the khasras of their circles and it became possible to work by circles without delay, this was done. As soon as they had completed their khasras, patwaris were not confined to their own circles. So long as a patwari was in his circle when the Settlement Officer and the Assistant Settlement Officer arrived in it, the Inspector was allowed to use him in any way that would conduce to the rapid completion of the work. After the Inspector had completed attestation of a village the papers were sent to the Assistant Settlement Officer to whom he was subordinate or the Superintendent, Land Records, as the case might be, and that officer proceeded to check the record made by the Inspector. The amount of checking by Assistant Settlement Officers or Superintendent, Land Records, in the field varied according to the degree of correctness with which the Inspector had prepared the records, but the Assistant Settlement Officer's field check covered on the average about 30 per cent. of the khasra numbers. He tested the correctness of every rent in the jamabandi by questioning the malguzar and tenants, and subjected the remainder of the papers prepared by the Inspector to a check which extended in the case of the malik-makbuza and absolute-occupancy comparative lists, the sir and khudkasht lists, the improvement lists and the statement showing the condition of tenants to an examination of every entry. The Assistant Settlement Officer also noted on the jamabandi the incidence per acre of the rent of each holding, so that the Settlement Officer could on glancing through the jamabandi detect at once any unusually high or low payments and ascertain the reason for the abnormal rents. In addition they recorded their estimate of siwai income with a brief abstract of the evidence in support of it, and wrote a note on the village dealing with the most important of the subjects which would have to be taken into consideration at assessment. Procedure followed in attestation.

Lastly, they had a statement prepared which showed in a convenient form the salient facts connected with the soils, cultivation and tenantry of the village, the incidence of rents and sub-rents and the enhancement of rents since settlement. The Settlement Officer then visited the village, tested the papers sufficiently to enable him to ascertain whether the record and map came up to the standard of accuracy required, and passed or rejected them according to the result of his test. I may say here that the number of instances in which it was necessary to return papers for correction was very small. He then recorded in a brief note his conclusions on the matters requiring consideration at time of assessment.

Details of attestation procedure.

186. It will not be out of place to describe as briefly as possible the means adopted to ensure the correctness of all the information required for settlement. The papers prepared with this object fall into two classes: firstly, those which are intended to facilitate the check of the survey record and map; and secondly, those connected with the collection of information required by the Settlement Officer to enable him to determine what measure of enhancement or reduction is required in the case of the rent of each tenant and revenue of each village.

Check of the survey map and record.

187. The check of 'right' and 'soil' classification involved a considerable amount of labour and was effected with great care and thoroughness. The enquiries made at survey as to the right in which malguzars held their land and as to whether particular plots of land were held in the malik-makbuza or absolute-occupancy right were not so satisfactory as they might have been, and the survey records were checked in detail in these respects. To enable the attesting officer to determine what land was held in sir right, abstracts were prepared from the old jamabandis showing the details of possession for the requisite number of years over all khasra numbers of which the malguzar was in possession at time of settlement, or over which he claimed sir rights. The conclusions to which the abstract pointed, were embodied in a list, showing all the khasra numbers in which the malguzar had sir or khudkasht rights, and stating briefly the grounds on which the land had been recorded as sir or khudkasht. The malik-makbuza and absolute-occupancy rights were not made personal to particular tenants at the settlement of 1864, but were conferred on particular plots of land. We had therefore in checking the records to see (a) what are the khasra numbers on the new map which correspond with the old numbers on which the right was conferred at settlement, (b) are these numbers held by the persons in whose favour the right was granted at settlement or their representatives or assigns? The inaccuracy of the settlement maps and areas rendered a comparison of the old and new settlement khasra numbers a difficult matter in the sir as well as in the malik-makbuza and absolute-occupancy enquiries. In determining the right in which these lands were held we passed differences of area up to 10 per cent. of the settlement area as immaterial and not infrequently such strong oral evidence was produced in refutation of the record that the attesting officers were justifiably guided by it rather than by the settlement record and map. The details of disputes were recorded by the Inspector for the orders of his superior officer. It was found that so many alterations in soil lists of survey would be necessary that it would be simpler to prepare fresh lists, and this was done in all villages. I have described in detail in paragraphs 17 to 23 the manner in which the different soils were recognized, and I need only add that to assist them in determining what land should be classed as wheat and cane land, Inspectors had a list prepared from the khasras showing all fields in which wheat and cane had been sown during the previous ten years. It is rare to find a field containing only one class of soil: in many numbers as many as 7 or 8 classes are found; so that if the Inspector merely wrote the area under each class in a list, it would be difficult for the checking officer to determine whether the field had been correctly classed by the Inspector: the latter therefore marked the different soil classes in pencil on the map.

Minor matters noticed at attestation.

188. Any inaccuracies or omissions in the map were corrected or supplied and a list of them was put in the file. The area of every khasra number was checked roughly by eye, and any obvious errors were noted for future correction in office. These were very few. The khewat was checked and brought up to date. The jamabandi was carefully checked with the khasra.

189. The sub-division of khasra numbers involved by corrections of incorrect survey, partitions, corrections of right, survey of new Government roads made since survey, were so numerous in a few villages as to involve the formation of a very large number of sub-numbers and bracketed numbers. The fields of these villages were re-numbered, the rules for the avoidance of mistakes of area, which are laid down by the Settlement Code being observed in each case. This completes the tale of those subjects included in attestation operations which are connected with the check of the survey misal and map. Re-numbering of certain villages.

190. The enquiries made at attestation with the object of supplying information required by the Settlement Officer to enable him to determine what enhancement or reduction is necessary in the case of the rent of each tenant and the revenue of each village, embraced the subjects referred to below:— Enquiries into matters connected with assessment which are made at attestation.

The caste and condition of tenants:—A list was made by the Inspector showing the name and caste of each tenant, the rent paid by him in each right, the number of cattle and wells owned, the arrears of rent and the debt due to creditors with the name of each creditor, details of encumbrances on the holding, the amount of pandhri or income-tax paid, if any, and the rent of land held by the tenant in other villages. This was supplemented by a statement showing transfers of tenant right since settlement. I found this list surprisingly accurate in all particulars and it was of great use in assessment.

Details of land entitled to exemption from assessment:—Lists of grass reserves used for feeding the agricultural cattle of the owner, of public groves and of land improved since settlement were drawn up by the Inspector. The list of improvements was often a very lengthy document and especially where malis were numerous, involved much careful enquiry as to the limits of areas irrigated from wells held jointly by half a dozen co-sharers.

Siwai income:—The Inspector recorded the result of his enquiries on this subject. Owing to the fact that he generally spent two or three days in each village, he was often able to pick up more information on this subject than the Assistant Settlement Officer or Settlement Officer who merely passed through it.

Ease or difficulty with which rents are paid:—The Inspector prepared a statement showing demand and collection of rents for the preceding ten years.

Village customs:—Notes of the village customs on subjects dealt with in the wajib-ul-arz were made by the Inspector.

191. The rate at which attestation and inspection progressed is shown below:— Progress of attestation and inspection.

Year.	NUMBER OF VILLAGES—		AREA IN SQUARE MILES—	
	Attested.	Inspected.	Attested.	Inspected.
1894-95	317	317	703	703
1895-96	511	511	1,157	1,157
1896-97	315	315	668	668
Total	1,143	1,143	2,528	2,523

Work was delayed in the first year by the illness of the Assistant Settlement Officers. Moreover, owing to the serious illness of the then Settlement Officer (Mr. Blakesley), attestation did not begin till December. Inspection was much hindered by my own illness. In the next year a very large area was covered, and in the following year attestation was completed at the end of April, and inspection by the middle of May.

192. During his tours of inspection the Settlement Officer determines the limits of the assessment groups. I endeavoured so to form the groups that the villages contained in each should be as homogeneous as possible. In a hilly Formation of Assessment groups.

district like this absolute homogeneity is impossible, but the only groups in which the want of this quality is so serious as to amount to a defect are, I think, the Nasirabad and Sasundra groups. The failure to attest and inspect a full area in the year 1894-95 is responsible for this shortcoming. The limits of the 19 groups into which the district was divided for assessment purposes are shown in the map attached to this report: 12 are in the Betul, and 7 in the Multai Tahsil.

SECTION V.

PRELIMINARY REPORTS.

Subjects dealt with
in Preliminary Re-
ports.

193. I believe preliminary reports on the lines laid down in Article 196 of the Settlement Code have been submitted for all tahsils in districts in which the 30-year settlement has been revised, but since 1895 these reports have acquired additional importance owing to the effect of the orders contained in the Government of India, Revenue Department's letter No. 848-89, dated the 21st March 1895. Under the orders previously in force the preliminary report dealt with the following subjects:—

- Population.
- Soil classification.
- System of agriculture, Crops, &c.
- Trade and Trade communications.
- Prices.
- Previous assessments.

In the orders referred to above, the Government of India directed that a report should be submitted for each tahsil "containing a short account of the salient agrarian and economic features of the tract, the rates of rental enhancement of each class of tenant justifiable upon general considerations, the standard rates of rental enhancement which it is proposed to adopt, the standard percentage of assets which it is proposed to take from proprietors, the estimated increase of the new over the old assessment of the tract, and the precise term for which the settlement is to be made." That is to say, in addition to an account of the subjects, which had previously been included, the report was to contain an estimate of the enhancement of rents and revenue which would be obtained in the tahsil, and a statement of the grounds on which the estimated enhancements were justified. It was further ordered that the re-assessment of a tahsil should not be announced without further reference to the Government of India, unless "the percentage of general rental enhancement for any class of tenant differed by not more than 10 from the sanctioned standard, or the amount of the proposed revenue demand differed by not more than 10 per cent. from the amount which would have resulted from the application of the sanctioned Government share to the assets as finally ascertained." These rules allow a sufficiently wide margin between actuals and estimates, but with the meagre materials available at the time the preliminary reports had to be written it was a matter of some difficulty to arrive at a satisfactory estimate. It was of course impossible to judge with certainty whether the margins would be exceeded until the whole tahsil had been re-assessed, but the Local Administration allowed me to announce each group as its new assessment was sanctioned, on its appearing that so far as revision of assessment had then proceeded, there was no reason to suppose that the ultimate enhancements brought out on the whole tahsil, would differ by more than the sanctioned standard from the estimates.

Manner in which
estimates of en-
hancement were ar-
rived at. Assets at
settlement.

194. It was necessary to ascertain the actual assets on which the assessment of 1864 was based. So far as tenants' payments are concerned this was easy enough, as it was only necessary to total the figures found in the settlement record of each village. But the valuation of the malguzars' home-farm and the estimate of siwai was not so easy. The valuation of sir and khudkasht worked

out in most villages at an absurdly low figure per acre. In some instances the valuation was really very low, in others the low acreage incidence was due to the fact that large waste areas had been (apparently by mistake) included in the holdings of malguzars. I eventually decided to adopt Mr. Ramsay's valuation as fair in all villages except those of the Betul Group in the Betul Tahsil, those being approximately the only villages in which waste had not been included in the home-farm. In those villages I valued sir at the all-round ryoti acreage rate of 1864. In the Multai Tahsil, where the villages in which nearly all the sir of settlement lay, were very fully occupied and no waste was included in the home-farm, I valued all the sir at the all-round rate and not at Mr. Ramsay's valuation which was much lower. Siwai income is nowhere referred to either in the records or the report of last settlement. It is true that in some villages lying in jungly tracts and scarcely cultivated at all, a very large percentage of assets was taken, but this was apparently justified by the Settlement Officer on the ground of an expectation of extension of cultivation. Statement I attached to Mr. Ramsay's Report and Chapter VIII of the report show that the assessment was based on differential rates applied to the cultivated and culturable area in each village. In calculating the incidence of his assessment per acre the Settlement Officer made no allowance for siwai, and it would appear that he did not intend any of his jamas to fall on income from the jungle. Nevertheless for the purpose in view it was necessary to make an estimate of siwai at settlement in order that the incidence of the demand on the actual assets of that day might be known. In the Betul Tahsil I estimated the siwai of settlement at half that of the present day. In the Multai Tahsil, for which the preliminary report was written after I had more experience of this district, I assumed that the income in 1864 from the various sources was as follows :—

Mahua	...	...	$\frac{3}{8}$ ths of the present income.
Harra, Gulli, Chironji, Lac and Gum	...	...	Nil.
Timber	...	...	About the same at settlement as now.
Fencing, Bamboos and Fuel	...	...	Nil.

This is of course only a very rough estimate. It is based on the remarks regarding timber in paragraphs 331 and 356 of the Settlement Report and on the statements of cultivators and dealers in jungle produce. The accuracy of these estimates was rendered yet more doubtful owing to the fact that when they were framed only 317 villages of the Betul Tahsil and 89 villages of the Multai Tahsil had been inspected, so that the estimate of existing income on which that of the income at settlement was based, had to be made to a great extent on the unchecked reports of patwaris.

195. The annual Land Record returns of the district furnished the figures of ryoti payments. I valued the home-farm in the Betul Tahsil at the absolute-occupancy-cum-occupancy acreage rate. But before the Multai report was written, further experience of the district had shown me that the application of the absolute-occupancy-cum-ordinary rate would bring out a more correct value. A large part of the ordinary area of settlement is now held in occupancy right usually at the same rent as was paid at settlement. The ordinary land of settlement was probably better than the ordinary land of the present day which is paying a higher rent. The occupancy land is in fact much undervalued at the present rate, and the inclusion of occupancy rents in the payments, on which the rate to be applied to sir land is calculated, would bring out too low a rate. The sir land proper is almost invariably as good as any land to be found in the village and not infrequently consists chiefly of the best fields with special facilities for irrigation or near the village site. The khudkasht is largely composed of holdings sold or relinquished by old established tenants owing to debt, death without heirs, &c., but there is also a leaven of new land broken up since settlement and of the inferior land, which is frequently changing hands. Absolute-occupancy tenants usually have the best land in the village after the sir land, and ordinary tenants hold some of the good land relinquished by absolute-occupancy tenants and occupancy tenants and a good deal of the inferior land mentioned above and of newly

Assets existing before revision of settlement.

broken land. In short, roughly speaking, absolute-occupancy tenants' land is similar to sir, and ordinary tenants' to khudkasht. So that a combination of the acreage rates paid by these two classes appeared likely to give the most correct valuation of the home-farm. The siwai was estimated as at inspection in villages which had been inspected, and on the basis of the patwaris' reports in other villages.

Grounds on which
the estimates of en-
hancement were
formed.

196. Before forming an opinion as to the enhancement of rents of each class of tenants justifiable on revision of settlement, it was necessary, to ascertain the difference between pressure of rent on each class at settlement and before revision. A mere comparison of the existing class acreage rates with those of settlement was not sufficient; because it was certain that the land held by each class at present (except perhaps the absolute-occupancy tenants) was not of the same average quality as that held at settlement. Relinquishment of land held in absolute-occupancy right, acquisition of occupancy right by prescription in land held in ordinary tenure at settlement, and the breaking of new land now held in ordinary right, all contributed to alter the character of the land held by each class. As there were no statistics of last settlement available to show total area under each class of soil then occupied, I had to form a rough estimate based on my general knowledge of the district of the average value of the newly broken land as compared with that of the land occupied at settlement. In this way an estimate was obtained of the true difference between the incidence of settlement rents and those existing before revision. This ascertained, the true percentage increase was compared with the enhancement justified by statistical considerations, and the additional enhancement imposable beyond that taken by malguzars during the currency of the settlement was forecasted. The existing payments of each class of tenant were then raised by the percentage of enhancement which would probably be taken. The value of the home-farm and land held on privileged terms was calculated at the enhanced acreage rates. The total of the tenants' payments, and value of home-farm which were obtained in this way, together with the siwai estimate, formed the estimated revised assets. The estimate of the percentage of assets to be taken from malguzar was formed on a consideration of (1) the incidence of the revenue of the 30-year settlement on the assets of settlement; (2) the degree of security of the existing assets; (3) the character of the malguzars.

Results of fore-
casts.

197. The orders of the Chief Commissioner, confirmed by the Government of India, directed that the standard of enhancement to be aimed at, was that which would raise rents to a figure 50 per cent. higher than that of settlement. The class enhancements, which were sanctioned by the Chief Commissioner and the Government of India, in conformity with this principle, were as follows:—

Class of Tenant.				Betul Tahsil.	Multai Tahsil.
Malik-makbuzas	...	...	...	20	25
Absolute-occupancy tenants	...	...	...	20	22
Occupancy tenants	...	...	...	20	22
Ordinary tenants	...	...	...	3	5

And the standard percentages of revenue sanctioned were 50 per cent. for the Betul Tahsil, and 56 per cent. for the Multai Tahsil. As will appear further on in this report, the enhancements ultimately obtained were within the prescribed margin of variation from the sanctioned standard except in the case of malik-makbuzas. This class holds quite an insignificant area. The revised revenue ultimately differed very little from that estimated.

SECTION VI.

RENT-RATE REPORTS.

198. As soon as the general scale of soil factors for the district and the standard of rent enhancement, has been sanctioned by the orders passed upon the preliminary tahsil report, the soil factors are applied to the areas, and the unit incidences for each class of tenant per mahal, and per group, are calculated. The Settlement Officer then determines the standard unit-rate for the group and the unit-rates to be used in each mahal, and submits his proposals for orders with a report called the Rent-rate Report. The orders on the subject are contained in Article 204 of the Settlement Code, and I need not repeat here what can be read in the Code. The considerations which determine the pitch of the standard and mahal rates are very fully dealt with in Appendix I to the Code, but it will not be out of place to say something as to the way in which these instructions were applied in practice.

Purpose of Rent-rate Reports.

199. The first relevant fact to be ascertained before determining the rate for the group is the true alteration in the pressure of rent since 1864. A mere comparison of the acreage rates of that date and the present day is not sufficient in most groups of this district, since there are few, in which the present occupied area is not of lower average quality than that of settlement, owing to the inclusion in the existing area of poor land broken up since settlement. The soil classification of settlement was too inaccurately effected to form a safe basis for a comparison of the average fertility of the land in occupation then and now. Moreover it was necessary to make some allowance for transfer of land from one tenure to another during settlement. No new land could be held in the absolute-occupancy right as that right could only arise by the order of the Settlement Officer of 1864. But increase or decrease in the acreage incidence might be the result of alteration in the average quality of the land held in this right and not of enhancement or reduction of rent. The only means of ascertaining this was by enquiry at the time of village inspection, and this was a point to which attention was always paid. It was frequently found that an apparent increase in the rate was due to the fact that a considerable area of the land held by one of the malguzar's relatives, who claimed no right to a share in the village at settlement had, on the death of the holder, fallen by the right of inheritance to the malguzar of the present day. And as tenants in this position always paid very low rents at settlement, this sometimes affected the rate for the class considerably. Another frequent cause of an apparent rise in the absolute-occupancy rate was the relinquishment of the inferior lands which paid a lower acreage rate at settlement than the rest of the land held in this right. By far the larger part of the newly occupied land is of course held by the ordinary tenants. But occupancy right has been acquired in an appreciable area. If none of the absolute-occupancy or sir land of settlement were now held in occupancy right and occupancy right had been lost in none of the occupancy land of settlement, the whole of the excess in the occupancy area of a particular village over the total of the occupancy and ordinary areas of settlement must be new land, and even allowing for transfer in a downward direction from one tenure to another during the term of settlement, it will still be approximately correct to say that this excess represents newly broken land held in occupancy tenure. By comparing class areas of each village in a group in this way, the approximate total of the new land held in occupancy right could be ascertained. The balance must be all held either by ordinary tenants or malguzar, a glance at the list of sir and khudkasht land when inspecting the village would show whether much land broken from waste since settlement was included in the home-farm, and a reference to the village notes at the time of writing the report made it possible to determine roughly how much of the balance was held by tenants, and how much by malguzars. Having ascertained the approximate areas of newly broken land held in occupancy and ordinary right, it remained to compare its average value with that of the land in

Consideration affecting the selection of standard and mahal rates. The true rise in the rent-rate.

occupation at settlement. This was done by an application of the soil factor system, which is exemplified by the extract from the Rent-rate Report for the Tapti Group of the Betul Tahsil, which I append below :—

“Acreage rates, now and at settlement, are compared below :—

Class of Tenant.	At Settlement.	At present.	Increase or decrease per cent.
	Rs. a. p.	Rs. a. p.	
Absolute-occupancy ...	0 5 9	0 6 4	+10'1
Occupancy ...	0 4 11	0 3 11	—20'3
Ordinary ...	0 3 7	0 4 4	+20'9
Occupancy-cum-ordinary ...	0 3 11	0 4 2	+6'3
All-round ...	0 4 5	0 4 7	+3'7

As already pointed out, the soil and cropping statistics of settlement are so obviously unreliable that it is difficult to compare the average value of land in occupation at settlement, with that of the present occupied area. I shall not be far wrong, however, in assuming that no rabi-growing land has been taken up since settlement, and only a small area of mutabarra growing kharif. There is moreover no reason to suppose that the wheat-growing area has contracted since settlement. I take it then that the area of land capable of growing wheat at settlement was 17,172 acres, *i. e.*, the same as the present wheat area and the mutafarikat area 41,029 acres. Soil classes must be now what they were at settlement, and I think that considering the large proportion of poor soils and disadvantageous positions included in the area capable of growing wheat (according to the present classification) an average factor for wheat lands higher than 16 is not justified. Of the mutafarikat area it is probable that about 7,000 acres was mutabarra at settlement, and a higher average value than five cannot be assumed for mutafarikat land at settlement. This would justify an all-round average value of eight for the occupied area at settlement. New land is practically all bardi mutafarikat and a factor of four will represent its value. The value of the new land is therefore about half that of the rent-paying land of settlement. Calculating on this assumption it appears that the true rise in the all-round rate has been 11'3 per cent. The statistics in Statement C of increase and decrease in areas held in tenant right show clearly that a good deal of the new land, probably not less than $\frac{1}{4}$ th is held in occupancy right. Not more than 600 or 800 acres of the newly occupied land is held in sir right. Allowing that the land held by occupancy tenants at settlement was rather below the all-round average value and that held by ordinary tenants was lower still, I think we may take a value of $7\frac{1}{2}$ for occupancy land at settlement and of six for the ordinary land. Then the true variation in the occupancy, ordinary and occupancy-cum-ordinary rates since settlement has been—

Occupancy ...	... (—) 17 per cent.
Ordinary ...	... (+) 47 „
Occupancy-cum-ordinary...	... (+) 17 „

The rise in the absolute-occupancy tenant rate is chiefly apparent only and is due to the relinquishment or absorption into sir of some low rented holdings. In a few villages absolute-occupancy tenants have been enhanced. The occupancy area has more than trebled since settlement, and the occupancy rate may be more correctly compared with the occupancy-cum-ordinary rate of settlement. When this is done, it appears that the true difference between the present occupancy rate and the occupancy-cum-ordinary rate of settlement is an increase of 4 per cent. It appears that no class of tenants has been enhanced since settlement in proportion to the rise in prices.”

Except in those few villages along the foot of the ghats, where cotton has since settlement taken the place of less valuable crops on some soils, and in those groups in which the increase in sugarcane cultivation has been very large, "the net profit in kind of the new land falls short of that of the old land in the proportion of the percentage by which prices have risen" (*vide* Appendix I to Settlement Code) and the actual analysis of areas leads to the same conclusion to which statistical considerations point. In the groups referred to special allowance has to be made for the alteration in cropping. In this connection I append an extract from Aonria-Bordahi Rent-rate Report:—

"The new land occupied since settlement is as specially noted in some of the village inspection notes, nearly all retari and bardi with an average factor of about three. Assuming that two-thirds of the land recorded old fallow at settlement was retari and bardi and the balance sihar mutafarikat, and taking nearly all the improved cane land to have been sihar mutafarikat at settlement the average value of the land in occupation at settlement would be represented by a factor of about 12. As prices have not risen more than 100 per cent., it would at first sight appear as though some of the new land must be cultivated at a loss. But it must be remembered that 2,425 acres of the new land has been occupied in place of the same area of sihar placed under sugarcane since settlement and if we substitute 2,425 acres of cane land for the same area of retari mutafarikat in the total area of land occupied since settlement, the average value of the new land will be represented by a factor of six. Over the group as a whole the value of the new land is then about as far below that of the occupied area of settlement as present prices are above those of settlement. But when we come to examine the figures for individual villages, it appears that in some the value of the new land is much less than half that of the land occupied at settlement (*vide* mauza Barchi No. 77, where reference to the map shows that the new land is all retari) in some the average value of the lands in occupation is much larger than at settlement owing to the extension of sugarcane cultivation (*vide* mauza Aonria No. 8, and Dongaria No. 79). The same fact is noticeable in all groups to some extent, but in none is it so important as here, where in one village a very large enhancement of rent may leave the rent-rate really lighter than at settlement, while in another with a fall in the rent-rate, the rate may really be 50 per cent. heavier than at settlement. For the purpose of ascertaining what the true rise in class acreage rate for the group has been, I will assume for the reasons indicated above that the value of the new land is half that of the old, then the land held in occupancy and ordinary right at present would pay per acre at settlement rates as shown below."

By reducing the present unit incidence by the proportion (ascertained as indicated above) in which rents have risen, the unit incidence of settlement can be ascertained and the standard rate for the group would be *prima facie* that obtained by raising the settlement incidence by the standard percentage of enhancement, which was in this district (*vide* paragraph 194) 50 per cent.

200. But in all except a very few groups this would have involved too large an enhancement to be imposed *per saltum*, and the condition of the tenantry and the average amount of individual rents were generally in practice the most important factors in the case. Take for instance the Chhachundra Group of the Betul Tahsil. The unit incidences of settlement were as follows:—

Absolute-occupancy	...	...	54
Occupancy	...	...	47
Ordinary	...	...	48
Occupancy-cum-ordinary	...	...	50
All three classes	...	...	54

A rate of 80 would have raised the all-round rate about 52 per cent. above settlement rates, but would have involved enhancing the payments of occupancy tenants (the largest class in the group) by 60 per cent. This rate, although individual rents in the group are for the most part small, would have brought out excessive enhancements on occupancy tenants, and a rate of 70 was adopted. The fact that a rate would enhance the rents of a particular class very largely did not however always necessitate its rejection. Where holdings are very composite, *i. e.*, where many tenants hold land on more than one tenure, a part of the enhancement on one class may be obtained by reduction in rents of another class. In some parts of the district the rents of absolute-occupancy tenants had not infrequently been enhanced to cover encroachments held now in

Other considerations affecting the determination of the standard rate.

occupancy right. In such cases there was a low occupancy incidence, but the application of a high rate was quite safe because the greater part of the enhancement of occupancy rents was obtained by adjustment with absolute-occupancy payments. Another common case in point is that of the group in which the class with the low incidence holds a comparatively small area, such as the malik-makbuzas in all groups in the district and the absolute-occupancy tenants in some. The orders which permit the Settlement Officer to allow margins on the deduced rent, made it possible in such cases to adopt a rate which would bring out a very large enhancement, without fear of too suddenly increasing the burden of the particular class in question. The great care with which the circumstances of each tenant were ascertained at attestation and inspection made a very wide application of this rule possible. The incidence of cash sub-rents as showing presence or absence of demand for land was also sometimes a guide to the amount of enhancement justified, though this was more often of practical use in fixing mahal than standard rates, the area sub-let on cash rents forming as a rule too small a proportion of the area of the whole group to afford ground for any useful inferences regarding demand for land in the group as a whole.

Mahal unit-rates.

201. In fixing mahal unit-rates a more detailed examination of the facts is necessary, because a circumstance affecting a very small area may largely influence the existing incidence. For instance, a low occupancy rate might be accounted for by a single large holding paying unusually low. If this were not noted before determination of the rate, the Settlement Officer might, unnecessarily, fix so low a rate that all occupancy deduced rents would be below the existing rents except in the case of the one low-rented holding. Unevenness of rent in one class was another circumstance that frequently affected the fixation of the mahal rates. This might be due either to some tenants having been enhanced since settlement and others not: or to inequality of assessment by the malguzar from before the settlement. In such villages a rate which would, if rents were even, have brought out only a very small enhancement, would actually result in adding a considerable sum to the rents of the class. Since all the low rents would be enhanced and the high ones would remain unaltered (unless the attendant circumstances showed that they could not be paid). The extreme case is that in which the land is held without rent. In jungly villages where plough rents were sometimes paid, a very high incidence might be due to a few new tenants, having not yet occupied a full plough of land. In some of the villages of the Multai Tahsil, where sugarcane cultivation has been much extended since settlement, the unit incidence for the village was very low, say .45 and *prima facie* a rate of .55 might be the highest which could be applied without imposing an unduly large *per saltum* enhancement, although all other considerations justified a much higher rate. If the rate of .55 had been taken, it would have been found on assessment that the greater part of the enhancement on sugarcane cultivation was absorbed by deductions from the deduced rent on account of improvements, while other rents were most of them already as high or nearly as high as the deduced rent. In such cases a rate bringing out a very large enhancement was justifiable, without straining the rule or allowing margins on deduced rent other than drawbacks on improvements and without excessive *per saltum* enhancement of individual tenants. Mistake in the record of area at settlement sometimes caused it to appear that there had been a large alteration in the incidence of a class, while in reality rents had been stationary. All these matters were so far as might be noted at the time of village inspection, but in case any might have been overlooked, I usually looked through the ryotwari abstract before proposing a mahal rate.

Unit-rates for home-farm.

202. As a rule the same rate was applied to the home-farm as to ryoti land. The grounds on which a higher rate may be selected for the valuation of the home-farm are stated in Appendix I to the Settlement Code. The number of villages in which a special rate was applied to sir was very small, probably not more than 30 or 40 in the district. High cash sub-rents habitually paid for sir were the circumstances which most frequently justified this course. Occasionally where a very low rate had to be paid on ryoti land owing to the low incidence of present payments, a higher rate not above the standard for the group was used for the home-farm.

203 I append a statement showing the standard adopted in each group and comparing the acreage rates produced by the standard rate for the most largely represented rabi and kharif soils in each group with the corresponding rent-rates adopted by Mr. Ramsay :—

Standard rate-adopted and the resulting acreage rates compared with Mr. Ramsay's rates.

Name of Group.	True rise per cent. in acreage rate since settlement (excluding grain payments).	Unit incidence before revision.	Standard rate.	Percentage of enhancement or reduction brought out by standard rate.	Acreage rate brought out by standard rate on that kind of wheat land which covers the largest area.	Acreage rate brought out by standard rate on that kind of minor crop land which covers the largest area.	COMPARED WITH MR. RAMSAY'S CORRESPONDING ACREAGE RATES.		Name of Mr. Ramsay's chak which corresponds to group.
							Wheat land.	Minor crop land.	
1	2	3	4	5	6	7	8	9	10
					Rs. a.	Rs. a.	Rs. a. p.	Rs. a. p.	
Betul I Three classes of tenants...	+ 7	'81	'95	+17	1 14	0 4	1 12 0	0 4 0	Chak Betul and Poni, Class I.
Dhaba II do. do. ...	+45	'92	'90	— 3	1 6	0 3	0 12 0	0 4 0	Chak Ranipur, Shahpur and Dhaba.
Nasirabad III do. do. ...	+32	'87	'95	+ 9	1 7	0 3	1 2 0 and 0 14 0	0 4 0	Classes I, II and III of Deogaon and Nasirabad Chak.
Chandu IV do. do. ...	+22	'82	'80	— 2	0 13	0 3	*	*	
Tapti V do. do. ...	+11	'66	'75	+14	1 2	0 3	1 0 0	0 4 0	Class II of Betul-Poni Chak and Jhallar Chak.
Betul-Khaloti VI Three do. ...	+50	'69	'75	+ 9	1 2	0 6	*	*	
Bhaisdehi VII do. do. ...	Nil.	'66	'80	+21	1 3	0 3	1 2 0 and 0 14 0	0 4 0	Classes I, II and III of Atner Chak.
Atner VIII do. do. ...	+19	'52	'70	+35	1 1	0 3	1 2 0 and 0 14 0	0 4 0	Do. do.
Bhourgarh IX do. do. ...	+60	'72	'60	—17	0 14	0 2	*	*	.....
Khamapur X do. do. ...	+55	'57	'60	+ 5	0 14	0 2	*	*	.....
Chachandra XI do. do. ...	+ 9	'59	'70	+19	1 1	0 3	1 2 0 and 0 14 0	0 4 0	Chak Amla, Classes I, II and III.
Tawa Valley, Betul XII do. do. ...	+30	'52	'60	+15	0 14	0 2	0 12 0	0 4 0	Chak Ranipur, Shahpur and Dhaba.
Multai-Khaloti do. do. ...	+69	'51	'55	+ 8	0 13	0 2	*	*	
Masod-Pattan do. do. ...	+ 3	'69	'85	+23	1 4	0 3	0 9 0 and 0 7 3	0 2 0 and 0 1 7	Chak Saikheda and Pattan, Classes I and II.
West Central Jawakhra do. do. ...	+ 5	'54	'65	+20	1 0	0 5	1 2 0 and 0 14 0	0 4 0	Chaks Multai and Dunawa, Classes I and II.
East Central Dahwa Dunawa do. do. ...	+ 7	'47	'60	+28	0 14	0 2	1 2 0 and 0 14 0	0 4 0	Do. do.
Tawa Valley, Multai do. do. ...	+58	'52	'55	+ 6	0 13	0 3	0 12 0	0 4 0	Chak Shahpur, Ranipur and Dhaba.
Aonria-Bordehi do. do. ...	+ 4	'61	'70	+15	1 1	0 2	†	†	
Chichanda do. do. ...	+50	'42	'50	+19	0 12	0 2	*	*	

* No rates applied by Mr. Ramsay.

† This lay in the Chhindwara District at last settlement.

It will be seen that in all groups except Masod-Pattan Mr. Ramsay's rate on the principal kharif soil is higher than mine, and, except in the Betul, Nasirabad and Dhaba groups my rabi rates are very little, if at all, higher than his. In those groups which include two classes of Mr. Ramsay's chak the acreage rate with which the rate produced by the standard unit-rate should be compared, is the mean between the rates for Classes I and II. In those groups in which all a chak are included the rate for Class II should be compared difference between these two sets of rates is of course no incement brought out by my rates because rents were not

fixed by the Settlement Officer in the 30-year settlement, and as I have stated before, the malguzar failed to raise rents to the standards adopted by Mr. Ramsay. Moreover the rents actually now assessed on bardi and retari fall at a much lower rate per acre than that shown in the statement owing to the exemption of fallow areas. But the comparison is interesting as showing the difference between the acreage rates which formed the basis of the 30-year settlement and those now adopted.

Forecast of enhancement in the Rent-rate Report.

204. In order that it might be known whether the mahal rates proposed would be likely to involve such a departure from the estimate of enhancement in the tahsil as would involve a reference to the Government of India, the existing rents of each mahal were increased by the percentage by which the proposed rate exceeded the existing incidence. Sir was valued at the revised all-round rate and the revised assets for the whole group having been totalled, the rates of enhancement on each class of tenant for the group were calculated and compared with those sanctioned for the tahsil. The probable revised revenue of the group was also calculated in the first few rent reports, but orders were afterwards received directing that this should not be done. The percentage enhancement of rent obtained in these forecasts were as below :—

				Betul Tahsil.	Multai Tahsil.
				Per cent.	Per cent.
Malik-makbuza	...	...	...	81	102
Absolute-occupancy tenants	...	...	...	20	25
Occupancy tenants	...	...	...	26	34
Ordinary tenants	...	...	...	6	11
Total of three classes of tenants	...	...	...	16	25

The percentage enhancements finally obtained will be found in paragraph 223. The difference is as explained in that paragraph due to margins and drawbacks granted for various purposes.

SECTION VII.

ASSESSMENTS.

Purpose of Assessment Reports.

205. After orders have been received on a rent-rate report the soil-units in each holding are multiplied into the mahal unit-rate and the deduced rent calculated. Revised rents are then proposed, the revised assets totalled, the revenue determined, and the revised assessments submitted for sanction with a brief report, called the Assessment Report.

Rent fixation. Grounds on which deduced rent may be exceeded.

206. *Prima facie* the deduced rent of a holding should be the revised rent, but the Settlement Officer is allowed to fix a higher or a lower rent for reasons which I have enumerated in paragraph 176. Obviously when the unit-rate has been fixed lower than it need otherwise have been in order to avoid excessive *per saltum* enhancement, the fact that the deduced rent is lower than an individual rent is no proof that rent is too high. Even where the enhancement proposed was not limited in this way, if a rent is regularly paid for the land on which it is fixed, it is clear that it is not too high even though the deduced rent may be much lower. The tenant may have other means of subsistence which give the land a special value to him. As in the case of the tenants of the villages along the Itarsi Road, many of whom make the greater part of their income by cart hire and are willing to pay a high rent for a little kharif land to occupy their bullocks in the slack season of the rains and supply them with fodder. On the

N. B.—Unless otherwise stated the figures in this section are those sanctioned before announcement and not those finally announced. The difference is however very small.

soil may have been classed too low either by mistake in the identification of the soil class or owing to some peculiarity of soil or situation which is not discernable on the surface. There is, however, one case in which a rent though regularly paid should be reduced, and that is when it is paid partly from other land of which the rent is enhanced. If a cash sub-rent habitually paid shows that the deduced rent is too low, a higher rent may be fixed even though this may involve enhancement of the existing rent. Cash sub-rents are not often paid in this district and still less often are they habitually paid, except on malik-makbuza lands, and as the existing payments of malik-makbuzas were almost always so low that it was impossible to enhance even up to the deduced rent, little use could be made of this rule when an opportunity of applying it arose, I considered that the tenant's rent should not unless the deduced rent justified it, be more than half the sub-rent. If a holding includes a large area of old fallow which is of material value to the tenant, the deduced rent, no part of which (as will appear further on) falls upon old fallow, may be exceeded. In a few instances where it was found that old fallow included valuable land, which owing to some special reason was not under cultivation, a small sum was assessed upon it, but occasion for doing so did not often arise. Lastly, if the Settlement Officer or Assistant Settlement Officer is able to certify from personal inspection that owing to special circumstances, the deduced rent is unduly low, a rent in excess of the deduced rent may be fixed. This provision of the Code was only once taken advantage of, *viz.*, in a village where too large an area of land had been classed kohli.

207. Apart from drawbacks allowed for improvements, &c., the only Margins. ground on which a rent lower than the deduced rent may be fixed is that to fix the deduced rent, would impose a larger enhancement than the tenant can pay *per saltum*. The ordinary rule for determining the abatement to be allowed in such cases is stated in Article 218 of the Settlement Code. Its amount depends "on the actual as well as the proportionate amount by which the deduced rent exceeds the present rent and also on the circumstances of the tenant" (*vide* Settlement Code). A percentage enhancement which would be excessive in the case of a tenant paying Rs. 50 rent would be insignificant on a rent of Rs. 5 and an enhancement which would be easily paid by a prosperous tenant could not be recovered from a cultivator on the road to ruin. The standard of abatement laid down by the Code is $\frac{1}{3}$ rd of the excess of the deduced rent over the present rent. The Code allows the Settlement Officer a wide discretion in this part of his proposals, and I availed myself of it freely. I considered a large enhancement to be one which exceeded 33 per cent. of the present rent and was also more than Rs. 5 and, as a general rule, I never imposed a large enhancement on any tenant whose circumstances were not above the average, subject to the proviso that unless the tenant was in bad circumstances I would not as a rule take less than half the enhancement brought out by the rate. If the tenant were exceptionally well-to-do I took more, and if badly off less. I do not mean that this was a hard and fast rule. If one is to avoid inequalities in detail it is necessary to have some fixed standard before one, and this was merely a development of the somewhat vague standard fixed by the Code. When deciding what margin, if any, was necessary, the whole rent paid by the tenant was considered and not that in one right or in one village only. Frequently, as I have indicated in dealing with the selection of mahal rates, a large enhancement in one right would be partly counter-balanced by a reduction in another, and it was often found that although the deduced rent imposed a large enhancement on a tenant in one village, the total enhancement was moderate or insignificant, when considered in the light of his payments in other villages, which might be little or not at all below deduced rent. The detail of rent paid by tenants in other villages was one of the most useful items of information afforded by the tenants' list prepared at attestation, and the possession of this information enabled me to avoid allowing unnecessary margins, which but for it would have been granted. In addition to the debt due from individual tenants I always paid attention to the number of their bullocks, and if it appeared that the plough-cattle were too few for efficient cultivation of the holding, allowance was made for this in fixing the rent. The enhancements exceeding Rs. 5 were very few in all except the best groups, not exceeding I think one for every five or six villages. In the best villages of the open country such as those of the Betul, Masod-Pattan and Jaolkhera groups, the individual

rents and the percentage of enhancement provided for in fixing rates being larger, many rents were raised by more than Rs. 5. The only group in which after subsequent experience, I think I was not liberal enough in granting abatements is the Nasirabad Group, and there only in a dozen of the best villages. Additional margins were ordered by the Chief Commissioner in this group and one rent was reduced after announcement on my recommendation.

Abatements on
other accounts.

208. Article 212 of the Code defines the classes of land which are entitled to complete exemption from assessment or to be assessed at a figure below that produced by the rate. They are briefly old fallow, new fallow in certain poor classes of soil, public groves, grass reserves for feeding the agricultural cattle of the tenant, and lands of which the value is increased by a durable improvement constructed during the term of the preceding settlement.

Exempt fallow.

209. It used to be the practice to calculate in the ryotwari abstracts the soil-units for fallow areas entitled to exemption from assessment and include them in the total of soil-units for the holding, so that part of the deduced rent fell on these areas, and the assessing officer had to calculate the drawback and deduct it from the deduced rent. This is now altered, and throughout the operations of this settlement, the soil-units of exempt fallow land were excluded from the totals by the statistical staff when preparing the ryotwari abstract, so that no abatement on this account had to be made. This had a double advantage in that it saved the assessing officers needless trouble, and made it possible to forecast with much greater accuracy what would be the result of the application of a particular unit-rate. The benefit of exemptions of new fallow was extended only to bardi, retari and sihar mutafarikat. Statistics showed that these are the soils in which land is habitually allowed to lie fallow for considerable periods. Mutabarra mutafarikat is also sometimes thrown out of cultivation for a year or two, but not to the same extent as the other soils named above. The exempted fallow areas are as follows:—

					Old fallow in acres.	New fallow in acres.
Sihar	...	...	...	...	170,185	7,568
Bardi	...	...	...	...		39,350
Retari	...	...	...	...		9,355
Total					170,185	56,273

The total fallow area exempted is 22 per cent. of the occupied area. There is little good soil included in the old fallow and practically the whole exempt area is covered with poor soils.

Public groves.

210. Public groves entitled to exemption are very few in number, groves are frequently unenclosed and open to use as camping-grounds, but the fruit of the mango trees, which invariably constitute the grove, is almost always taken by the owner for sale.

Grass reserves.

211. Grass reserves, commonly known as 'birs' are found in all the open villages, where the area available for grazing is small. In some parts of the district grass is a paying crop on poor land and the full area of the birs is rarely entitled to exemption. If I found that a tenant sold part of his crop and used the rest of it as fodder for his own bullocks or for thatching his house I exempted a part of the bir area and assessed the rest.

Improvements.
Wells.

212. The various kinds of wells in use are described in paragraph 84. It was easy enough by local enquiry to ascertain which of the wells had been made since the settlement of 1864, but the distinction between durable and non-durable wells was not so easy. There is a rule by which no embankment which costs less than Rs. 50 shall be considered a durable improvement. It was at first understood

that this rule applied to wells also, and in the Betul Tahsil no well costing less than Rs. 50 was recorded as durable. This rule was fair enough in the Betul Tahsil, where nearly all of the sugarcane cultivation is in the deep black soils of the best villages in the tahsil in which durable wells cannot be made at small expense. But it was found soon after beginning the inspection of the Multai Tahsil, that a strict application of this rule would exclude a number of durable improvements from participation in the advantages secured to cultivators by the standing orders. I pointed this out to the Settlement Commissioner when he passed through the tahsil, and in accordance with his instructions particulars were recorded in the improvement lists for every existing well which had been made during the term of settlement, in order that when full information on the subject was available, and the orders of the Local Administration had been taken, it might be possible to select those wells which should be considered durable without further local enquiry.

213. The principles on which the distinction was ultimately made are set forth in the extracts from my No. 314, dated the 3rd May 1897, which will be found below. This letter was written with the object of obtaining the instructions of the Local Administration. I was, however, ordered to use my own discretion in the matter and acted accordingly on the principles defined in the following extracts :—

Distinction between durable and non-durable wells in Multai Tahsil.

"Under the authority of Government of India, Revenue and Agriculture Department letter No. 103—29-2-K, of 31st January 1888, to the address of the Chief Commissioner, Central Provinces, read with Chief Commissioner's Junior Secretary's No. 2840-5, of 25th August 1887 (*vide* Appendix to Revenue Book Circular, Section I, No. 13) land improved by a durable well or water-lift is to be assessed at dry rates at the settlement next ensuing after the construction of the well. A paragraph to the following effect in the Junior Secretary's letter specified above, deals with the distinction between durable and temporary wells and lifts. 'The wells used for irrigation purposes in these Provinces may be classified according as they are of durable or of merely temporary construction. The former class includes of course wells of very different costliness, as the cost of well digging varies very greatly with the nature of the substratum. But there is a tolerably sharp line of difference between a durable well and the temporary wells, which are dug for a single season, and which are mere holes in the ground from which water is drawn by means of the lever lift. Indeed the use of this lift may be taken as a tolerably safe indication that a well is of a temporary character.' It appears to me that this distinction scarcely fits the facts in this tahsil and the distinction between durable and temporary wells is one of the points on which I now request orders. The orders in the letters quoted above were further supplemented by a direction contained in Revenue Book Circular, Section I, No. 13, to the effect that the minimum outlay on field embankments, which should entitle a man to a certificate (*i. e.*, should entitle him to have the land assessed at the next settlement as though it had not been embanked) should be Rs. 50. Moreover, that the area to be regarded as improved should be, as shown by local enquiry, provided that credit should not ordinarily be given for a larger area than 1 acre for every Rs. 15 of outlay or in special cases 1 acre for every Rs. 12 of outlay. In the Betul Tahsil where irrigation is chiefly carried on in the deep black soils of the Betul group and in the Atner and Bhaisdehi basins of black soil, wells are usually substantially shored with brick and, a well with any pretensions to durability costs as a rule well over Rs. 50, so that no hardship was involved in applying the Rs. 50 embankment rule to well improvements also, and this was done. The case is, however, different in Multai as will be seen below, and I would also request orders as to whether any minimum outlay is to be established before a well can be reckoned as an improvement. The wells in use may be divided into four classes according as the soft part of the well-wall is shored with (a) brick, (b) stone, (c) wood, or (d) unshored. Wells are never shored right to the bottom. The shoring rests on the substratum, a margin of which is left projecting for the wall of stones, brick or logs to rest upon. Wells in class (a) shored with sun-dried bricks joined with mud are the most expensive kinds of wells made. They are often a combination of classes (a) and (b) with stone shoring behind the bricks. If the substratum on which the bricks rest is of fair solidity, they are durable, and, unless the water is very near the surface cannot be made for less than Rs. 50. As they are expensive things to make, a man does not often brick a well in which he has not a good supply of water and a reasonable certainty that the substratum is of such a nature that it will not give way. It may therefore be taken for granted that a bricked well is a durable improvement. The most numerous wells are those shored with stones. They are similar to bricked wells, with stones in place of bricks. The stones are unshaped, but are so chosen and placed that their flat surfaces fit closely into one another. Given a strong substratum the number of years for which these wells will last depends entirely on whether the upper layers of soil and moorum are unusually hard or of average softness. In the latter case the well will not last more than 4 to 8 years without the shoring of stones falling into the well together with a mass of earth and soft moorum, so that the well becomes more or less choked up. Those

wells (not an uncommon class) which are made in very shallow soils (bardi or mutbarra) and shored with stone will last for many years, probably quite as long as bricked wells. The cost of this class of well varies immensely according to the depth at which water is obtainable, and the degree of hardness of the rock or moorum to be pierced. The lowest cost is probably about Rs. 10, but with very hard rock and water at great depth the outlay may run up to Rs. 100 or even more. Supposing a stoned well in soft soil to be maintained by continual cleaning out and re-shoring whenever it falls in, the cost may mount up to a large figure in 20 years or so. The third class of wells depends for its durability on the kind of wood used; large logs of teak or jamun in wells where it is not necessary to shore below the high-water mark last a very long time. I have been shown a well shored with teak that was said to have been untouched since the time of the Mahratta Raj. But if small teak saplings or other woods such as dhaora, lendia, tinsa, etc., are used, they rot in two or three years and if not renewed the well falls in. In this part of the district wood is little used in wells as the jungles are far away. The cost is probably about the same as that of stoned wells. The fourth and last class of well, *viz.*, the unshored well is generally either one in very hard rock or moorum from top to bottom or one in which the supply of water is so small as to be of little value. In very hard rock the cost is sometimes well above Rs. 50 and the well is as durable as are the better sort of stoned wells.

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"4. It will be seen that the temporary water-hole referred to in the Junior Secretary's letter is unknown here. No one makes a well without intending to use it for some years. Lever water-lifts are not used. If only those wells which are dug for a single season are to be considered temporary, then all the wells in the tahsil are durable. The people themselves distinguish between *kutchha* and *pacca* wells, including in the former classes all those stoned wells, which are liable to fall in every few years, as well as those shored with *kutchha* wood and all unshored wells. The object of exempting improvements from assessment is, I believe, to avoid discouraging the cultivators so that they shall be less inclined to improve their land. I may remark incidentally that the assessment of improvements has certainly had no tendency to deter cultivators from making wells in this district, for the number of irrigation wells and the area under cane has largely increased since settlement in spite of the fact that the settlement Officer worked out a great part of his enhancements of revenue by putting a special rate on irrigated lands, a procedure which had not been followed in previous settlements. This may have been the result of the very high price commanded by gur about the middle of the term of settlement. Improvement of land by wells differs, I think, from improvement by tanks or embankments in that the result of the cultivator's labour and expenditure is uncertain, and the resulting increase in profits is often altogether disproportionate to the outlay incurred. A man may sink a deep well in hard rock and moorum at a cost of Rs. 50 and only obtain sufficient water for the irrigation of $\frac{1}{4}$ an acre of sugarcane, or he may with an expenditure of Rs. 30 get water enough to irrigate an acre. Supposing both these wells to be durable and we allow for the improvement by assessing the whole area brought under irrigation at dry rates, the man who spent Rs. 50 is much less benefited than the man who spent Rs. 30. On this ground it would perhaps be well if the drawbacks for well improvements were based on the expenditure incurred. There is however a practical objection to this and that is the extreme difficulty of gauging the cost of a well. The supposed cost of all wells made since settlement has been entered on the improvement lists, but the amounts stated are certainly often far from correct, both because it is not easy for an ignorant cultivator to remember what he spent on a well that perhaps took him three or four years to bring to its existing condition and part of the labour on which was performed by his sons and himself: and because the better informed amongst the malguzars and tenants frequently knowingly overstate the cost of wells. As a matter of fact I think that the poorer and more simple class of cultivators usually understate, and the others overstate, the cost. It is impossible for anyone but an expert to judge what the true cost was, as formations which look very similar appear to be of very differing degrees of hardness. Even an expert would have a difficulty in gauging the cost as this is often much increased by the well falling in while under construction.

"5. It seems to me that the case would be met by the following arrangement:—

"All bricked wells and all stoned wells in hard moorum or rock which do not fall in periodically, as well as the exceptional unshored wells which are in rock from top to bottom and wells shored with large logs of teak or jamun, to be considered durable. As regards the class of stoned wells which fall in periodically it is impossible to say whether they will last long or not as this depends entirely on the cultivator's inclination to go on clearing them out and restoring whenever they fall in. It is however probable that if the well has a good supply of water, the cultivator will maintain it, and I would regard these wells as durable if they irrigate every year a plot of not less than 1.50 acres of sugarcane.

"Under this arrangement, a great many wells, the original cost of which was not more than Rs. 20 or Rs. 30 will be regarded as durable, but the cost of maintaining them will raise their ultimate cost at the end of 15 or 20 years well above Rs. 50."

214. I have described the various kinds of embankments made in the district in paragraphs 48 and 50. Few of them cost so much as Rs. 50, and few therefore rank as durable improvements entitled to exemption. The number of 'bandhias' or 'bandhans' in the Betul Tahsil was so small that no factor was fixed for land in this position. Where land was found which would have ranked as tagar or bharkila but for an embankment, it was classed as tagar or bharkila, and the improvement allowed for in this way. In the Multai Tahsil embankments were more numerous, but even there few were so substantial or cost so much that they ranked as durable improvements entitled to exemption. For that tahsil a bandhan soil factor was fixed. The improvement lists showed what the class of the land had been before embankment and in assessing it was valued as if still of that class.

Embankments.

215. I give below a table which shows the amount of drawbacks granted in order to exempt durable improvements and compares the total amount of the annual drawbacks for the term of settlement with the cost of improvements. (The statement includes drawbacks on the home-farm also) :—

Amount of drawbacks on account of improvements.

Name of Group.	Kind of durable improvement.	Number of each kind made since settlement.	Cost.	Area improved.	Amount deducted from rent on account of improvement.	Term of settlement.	Total amount for term of settlement.	Percentage of column 7 on 3.
1	2	3	4	5	6	7	8	9
MULTAI TAHSIL.								
			Rs.	Acres.	Rs. a. p.	Years.	Rs. a. p.	
Betul	Wells ...	243	43,749	1,443'10	...	...	...	...
	Embankments ...	2	375	24'02	1,691 10 8	15	25,375 0 0	60'2
Dhaba	Wells ...	103	21,875	452'64	683 14 0	15	10,258 2 0	46'8
	Embankments ...	...	...	...	...	...	...	...
Nasirabad	Wells ...	122	16,625	510'61	747 4 6	15	11,209 3 6	67'4
	Embankments ...	...	...	...	...	...	...	...
Chandu	Wells ...	5	500	15'36	15 6 0	15	230 10 0	46'0
	Embankments ...	...	...	...	...	...	...	...
Tapti	Wells ...	44	4,606	185'07	168 10 0	15	2,529 6 0	54'8
	Embankments ...	...	...	...	...	...	...	...
Betul-Khaloti	Wells ...	...	...	...	...	...	...	...
	Embankments ...	...	...	...	...	...	...	...
Bhaisdehi	Wells ...	13	1,260	107'73	150 11 0	15	2,260 5 0	179'3
	Embankments ...	...	...	...	...	...	...	...
Atner	Wells ...	29	2,035	167'57	168 10 0	15	2,529 6 0	113'6
	Embankments ...	3	190	22'50	...	...	...	...
Bhourgarh	Wells ...	2	350	4'75	4 9 0	14	63 14 0	18'1
	Embankments ...	...	...	...	...	...	...	...
Khamapur	Wells ...	16	1,643	50'03	52 14 0	15	793 2 0	48'2
	Embankments ...	...	...	...	...	...	...	...
Chhachundra	Wells ...	77	7,115	349'17	449 14 0	14	6,298 4 0	87'2
	Embankments ...	1	100	10'00	...	...	...	...
Tawa Valley (Betul)...	Wells ...	20	3,435	82'44	94 15 0	14	1,329 2 0	38'6
	Embankments ...	...	...	...	...	...	...	...
Total	Wells ...	677	1,01,193	3,375'47	4,228 6 2	...	62,876 6 6	61'7
	Embankments ...	6	665	56'52	...	...	...	...

(Concluded).

Name of Group.	Kind of durable improvement.	Number of each kind made since settlement.	Cost.	Area improved.	Amount deducted from deduced rent on account of improvement.	Term of settlement.	Total amount for term of settlement.	Percentage of column 7 on 3.
1	2	3	4	5	6	7	8	9
MULTAI TAHSIL.								
			Rs.	Acres.	Rs. a. p.	Years.	Rs. a. p.	
Multai-Khaloti	Wells ...	...	...	...	...	...	...	...
	Embankments ...	...	...	...	...	...	...	...
Masode (Pattan)	Wells ...	95	7,488	333'03	359 4 0	15	5,388 12 0	68'5
	Embankments ...	4	375	12'50	...	...	...	...
Jawakhera	Wells ...	216	15,202	858'13	849 4 8	13	11,040 12 8	69'2
	Embankments ...	8	748	40'75				
Dahwa (Dunawa)	Wells ...	254	17,292	1,022'36	1,146 14 9	13	14,909 15 9	70'3
	Embankments ...	25	3,908	110'36				
Tava Valley (Multai)...	Wells ...	...	...	...	21 1 0	14	294 14 0	...
	Embankments ...	...	...	...	...	...	...	...
Aonria Bordahi	Wells ...	362	46,245	1,380'66	1,916 1 0	14	26,824 14 0	57'9
	Embankments ...	1	50	4'70	...	...	...	...
Chichanda	Wells ...	46	1,673	172'71	94 8 0	15	1,417 8 0	77'7
	Embankments ...	1	150	5'00	...	...	982 8 0	...
Total	Wells ...	973	87,900	3,766'89	4,387 1 5	...	59,876 12 5	64'2
	Embankments ...	39	5,231	173'31	...	...	...	...
DISTRICT TOTAL	Wells ...	1,650	1,89,093	7,142'36	8,615 7 7	...	1,22,753 2 11	62'8
	Embankments ...	45	5,856	229'83	...	...	...	...

It will be seen that the drawbacks are very large in the Aonria-Bordahi Group of the Multai Tahsil. The reason for this is that most of the improved sugarcane land in that group is sihar or retari which used before the wells were sunk to grow only minor crops. It must be remembered that in addition to the drawbacks now granted the improvements have been unassessed for so much of the term of the 30-year settlement during which they have existed, so that the total amount of rent which might have been assessed on the increase of produce is much larger than that shown in the statement above and is probably not far short of the cost of the improvements.

Drawbacks on sugarcane gardens which do not at present grow sugarcane.

216. I have said that a good many sugarcane gardens have lately been placed under rabi crops owing to the fall in the prices of gur or to the advent of 'agia'? When classing land the Inspector had before him a list of khasra numbers which had grown sugarcane within ten years, and all land which appeared in this list was classed as sugarcane land unless some fact was ascertained which made it clear that the cultivation of the cane had been definitely abandoned, such as the ruin of the well. But as it was uncertain how long this land would remain uncropped with cane, and some of it might not be placed under the crop again, a drawback was allowed on the deduced rent of all cane gardens which are not at present growing this crop. The amount of drawback was equal to half the difference between the rent brought out by the application of the irrigated wheat factor and the sugarcane factor. The valuation at a higher rate than irrigated wheat land was justified by the fact that a water-supply which would water say 1 acre of cane land would be sufficient to irrigate a much larger area of rabi land. The amount of these drawbacks was Rs. 859-6-0 or for the term of settlement about Rs. 13,000.

217. Reductions of rent may be divided into three classes :—*viz.*, reduction of a rent paid on land held in one right, in adjustment with rent paid in another right by the same tenant : reduction by commutation of rents paid in kind : reductions of excessively high cash rents. Reductions of rent.

218. Reductions of the first class were very numerous. They have been incidentally referred to in describing the manner in which mahal unit-rates are determined. They are mere adjustments and need not be further noticed. The total of this class of reductions is about Rs. 8,500. Reductions of adjustment.

219. Under Section 16 of the Central Provinces Tenancy Act of 1883, which was in force when the assessments were made, the Settlement Officer had power on application by malguzar or tenant to commute rents paid in kind by absolute-occupancy and occupancy tenants to a fixed cash rent, but no provision of law existed under which the commutation of grain rents paid by ordinary tenants could be compelled. In this district the absolute-occupancy and occupancy tenants always pay cash rents except on maize gardens on which in many villages a paili or two of maize is taken by the malguzar instead of a cash rent. These small payments were of no consequence and no applications were made for their commutation. The total value of the grain payments of these two classes is Rs. 35-9-8 and Rs. 1,377-3-3. Ordinary tenants besides rendering maize on account of the rent of maize gardens, sometimes hold land on a fixed grain payment or on half produce. In the former case the payment is known as a 'khot' rent, in the latter as 'batai.' The value of their grain payments is Rs. 8,649-1-7. Reductions in commutation of rents in kind.

Nearly the whole of the land held on these terms is that referred to in paragraph 136. A batai rent must on the average be much heavier than any cash payment since it amounts to half produce minus seed with siwai interest. This on an acre of wheat in a normal year equals about Rs. 15 per acre. Khot rents are not necessarily high, but in practice they are always in this district (except in the case of the maize gardens) much higher than cash rents. As it was to the advantage of the tenant that the rent should be commuted, the malguzars were always asked to commute. They generally objected that if they agreed to this, they would lose their right of re-entry on the land. But when it was pointed out to them that whether the rent were commuted or not the cultivator had tenant right, and that if the rent were not commuted, I should be justified in valuing the land considerably higher than it would be if a cash rent were fixed, they almost invariably agreed to the commutation. In this event the cultivator was informed of the cash rent fixed, and an agreement to abide by this rent and to remit arrears (in the case of khot rents) was taken from the malguzar. High khot rents which had been regularly paid were commuted to a rent higher than the deduced rent on the same principle that a rent in excess of the deduced rent may be fixed on holdings paying a high habitual sub-rent. Batai payments were generally commuted to any fair cash rent not lower than deduced rent to which malguzar and the tenant might agree. The total of reductions of this class is about Rs. 3,550.

220. Excessively high cash rents were paid (a) by tenants of land which used to grow opium, and (b) by ordinary tenants in villages of which the malguzars did not scruple to rack-rent their tenants. Nearly all the opium land is held in absolute-occupancy and occupancy right, so that it is correct to say that the reductions granted on absolute-occupancy and occupancy rents are rendered necessary by opium rents, and those on ordinary rents by rack-renting. The orders governing the reduction of high cash rents are contained in Article 215 of the Settlement Code. Reductions of excessive cash rents.

221. In an address presented by the malguzars of the district to the Chief Commissioner at a darbar held in Badnur at the beginning of 1895, it was alleged that a large number of tenants in the Multai Tahsil were unable to pay the very high rents which had been fixed and paid with ease in the days of opium cultivation. I expected therefore to find extensive reductions necessary in that tahsil. But on investigation it very soon became apparent that the facts had been grossly exaggerated. It was true that opium had been largely grown in the tahsil between 1864 and 1878 (much more largely in the seventies than at the time of settlement), but it was only in a few of the villages where the cultivation of the crop was Opium rents.

most profitable that excessive rents had been fixed. Apart from rent-rates, this was clearly shown by the condition of the cultivators and the absence of arrears of rent. Most of the opium land was in the geunra area, which is always especially valuable except when cropped with sugarcane, and even when under rabi pays a rate of Rs. 2 or Rs. 3 per acre.

Several of the villages where opium rents are highest are situated in a thickly populated part of the country, where it is possible to cultivate vegetables at a good profit, so that the payment of the high rents was not so difficult as it might have been. In practice unless there was strong evidence to show that any arrears or debt which existed, were due to the rent and not to other causes, I considered that there was no need to reduce an opium rent which fell at Rs. 5 per acre or less, if the land now grew sugarcane or vegetables or both with a good water-supply. If the present crop was of inferior character, I did not refuse reduction although the acreage rate was lower than Rs. 5. When it appeared that the rent was being paid without difficulty I left it untouched even though the acreage rates were much higher than Rs. 5. The only instances of this which I can recall are some very good cane gardens held by well-to-do tenants who cultivate with their own capital. The total reductions in absolute-occupancy and occupancy right, which may be taken to be all reductions of opium rent, are Rs. 1,228-10-5.

High rents due to
rack-renting.

222. As I have already said rack-renting is only practised at the expense of ordinary tenants. It is a regrettable fact that the Court of Wards had not until a few years ago set a good example to malguzars in this respect. It used to be the practice to put up vacant holdings to auction, and in the excitement of the moment, aggravated perhaps by a feud between rival cultivators, a tenant would agree to pay an absurdly exorbitant rent to which he was afterwards held. A good many of the rents which have been reduced had been fixed in this way. Good evidence either in the shape of arrears or debt was always required to prove that the rent was really higher than could be paid. Under the Tenancy Act of 1883 the malguzar must collect the rents fixed by the Settlement Officer on land held in absolute-occupancy and occupancy tenure, but he was not bound in the same way in regard to ordinary rents. It was therefore necessary if the tenant was to get the benefit of the reduction to obtain the malguzar's consent and a written agreement to abide by the rent fixed until it could be enhanced according to law. The remission of the arrears of the preceding three years was also made a condition of the reduction. Occasionally malguzars objected, and in some instances they succeeded in showing that rents supposed to be exorbitant were not really so. But as a rule their objections were based on ill-will towards the tenant or a mistaken belief that it was to their advantage to maintain the rent. When it was pointed out to them that they would be exposed to a two-fold loss if they refused their consent to the fixation of a fair rent, they almost always gave in. In the few cases in which they did not, the existing exorbitant rent was included in the assets, and the revenue was fixed at a higher percentage of assets than the normal, with the object of discouraging such practices in future. The only important case of refusal to reduce, which I can call to mind, is that of a holding in mauza Betul paying a very large rent. The malguzar refused to reduce on the ground that he had vowed the income from the field to a temple. The total amount of these reductions is Rs. 3,318-2-10.

Results of rent
fixation.

223. I give below two statements which show in a tabular form the manner in which the net enhancement imposed on each class has been obtained together with some figures showing the incidence of rents per acre and per soil-unit at present and at settlement. The figures in the first table are those finally sanctioned by the Chief Commissioner. The second table has been prepared from similar statements submitted with each assessment report, and as it would have involved much labour to have altered these statements so as to bring on to them the changes ordered by the Chief Commissioner they have been left uncorrected, and the second table represents proposed and not sanctioned rents. The changes ordered by the Chief Commissioner were very small in proportion to the total payments and as the orders involved some additions to, and some deductions from, proposed rents, a part of the total cancelled out, and the net difference is very small and of no importance for the purpose with which the statement has been prepared.

TABLE I.

Class of Tenant.	Percent- age of area held to total occupied area.	ACREAGE RATE.			UNIT INCIDENCE OF		RENT.		INCREASE.		PROPORTION PER CENT. TO DEDUCED RENT OF		INCREASE PER CENT. OVER LAST SETTLEMENT ACRE- AGE RATE OF	
		At settle- ment.	At present.	As revised.	Present payment.	Revised payment.	Rs. a. p.	As revised.	Actual.	Per cent.	Present payment.	Revised payment.	Present rate.	Revised rate.
Malik-makbuza	06	0 8 4	0 8 6	0 13 2	'53	'83	Rs. a. p. * 3,697 9 0	Rs. a. p. 5,677 6 0	1,979 13 0	+53.4	Rs. 51.5	Rs. 79.0	+ 20	+58.0
Absolute-occupancy	16.9	0 7 8	0 8 8	0 10 2	'59	'70	94,100 14 0	1,10,962 0 9	16,861 2 9	+17.9	80.9	95.5	+13.0	+32.6
Occupancy	36.7	0 7 0	0 5 2	0 6 6	'57	'73	1,23,400 4 9	1,55,469 5 11	32,069 1 2	+25.9	77.7	97.9	-26.1	- 7.1
Ordinary	33.9	0 4 7	0 5 7	0 6 0	'84	'90	1,23,096 13 8	1,30,983 12 11	7,886 15 3	+ 6.4	110.9	118.3	+21.8	+30.9
Total of three classes of tenants.	87.5	0 6 0	0 6 0	0 7 0	'66	'77	3,40,598 0 5	3,97,415 3 7	56,817 3 2	+16.7	88.2	102.9	...	+16.6

* Excluding Ubang payments.

TABLE II.

Class of Tenant.	NET ENHANCEMENT.		Enhancement on existing rent.	ENHANCEMENT OBTAINED BY		REDUCTION DUE TO		
	Actual.	Per cent.		Fixation on land held without rent or on pepper-corn rent.	Re-distribution.	Reduction of high rent.	Reduction owing to commutation of grain rent.	Re-distribution.
Malik-makbuza	Rs. a. p. 1,969 0 0	53.3	Rs. a. p. 1,785 15 2	Rs. a. p. 193 10 0	Rs. a. p. 2 6 0	Rs. a. p. 10 15 2	Rs. a. p. ...	Rs. a. p. 2 0 0
Absolute-occupancy	16,999 0 9	18.0	18,727 4 7	676 4 1	1,525 4 1	465 1 4	0 4 0	3,464 6 8
Occupancy	32,375 1 2	26.2	27,183 7 8	3,584 0 2	4,856 2 0	763 9 1	81 6 2	2,403 9 5
Ordinary	8,019 11 3	6.5	12,085 7 8	3,232 5 6	2,120 13 10	3,318 2 10	3,466 3 1	2,634 9 10
Total of three classes of tenants	57,393 13 2	16.8	57,996 3 11	7,492 9 9	8,502 3 11	4,546 13 3	3,547 13 3	8,502 9 11

224. The figures for malik-makbuzas in the above tables include only the revenue paid by plot proprietors who have not been granted an assignment of a part of the revenue. Table I shows that these payments have been enhanced 53 per cent. and that the revised rents are 79 per cent. of the deduced rent, *i. e.*, there has been a very large enhancement, but large margins have been allowed. The unit incidence of this class before revision was only '53 and was lower than that for any class of tenants proper. The reason for the low payments of this class is apparent from paragraph 107 of Mr. Ramsay's Report. He says: "They have been assessed with their quota of the Government revenue proportional to the demand upon the entire village besides a certain percentage to the lambardar for the cost and trouble of collection." The payments were in fact assessed as revenue with the addition of a small commission to the malguzar. Whereas now they are determined in the same way as rents, although they are of course really revenue and not rent. The figures for present payments in the above tables and in the statements at the end of this report, include the substantive payment plus the malguzar's commission. They paid at settlement and pay now the same cesses as malguzar, amounting in this district to 13 per cent. of the revenue. So that their total payments inclusive of cesses are 90 per cent. of deduced rent. Malik-makbuzas.

The second of the two above tables shows that Rs. 193-10-0 out of the total enhancement is due to fixation of revenue on land held without payment. This is land in which the holder has obtained proprietary rights from the malguzar, coupled with the right to hold free of payment of any kind. They are recorded as malik-makbuza-muafidar-malguzar. The right has usually arisen owing to a sharer in a village having relinquished all right to a share in the profits in consideration of the grant of the right to hold his home-farm free of all payments. This is of course an agreement between himself and the other shareholders and does not affect the right of the Government to take the revenue due on the land. It is paid by the other parties to the agreement. Deducting this sum of Rs. 193-10-0 from the total enhancement imposed, it will be seen that the actual enhancement payable by the class is 48 per cent. of their present payments. Only a small part of the margins granted is due to abatements for improvements or on cane gardens which do not now grow the cane. Such a large enhancement would not have been justified had it not been that a considerable area of land held in this right is sub-let on high cash rents of which a large part are habitually paid.

The figures are:—1,372 out of 6,850 acres sub-let for Rs. 2,066-12-0 (rate Re. 1-8-2 per acre) and of this 1,048 are sub-let on rents totalling Rs. 2,519-1-11 (falling at Rs. 2-6-5 per acre) which are habitually paid. These sub-rents show very clearly the moderation of the revised payments. Moreover a great part of the area is held by Brahmins or well-to-do malguzars (the *ex-muafidars* referred to in paragraph 107 of Mr. Ramsay's Report), who have other means of subsistence.

225. The great majority of absolute-occupancy tenants have some land in occupancy or ordinary right paying nothing or only a pepper-corn rent. These are unassessed encroachments, which the malguzar has been too careless or too weak to prevent or assess to rent. It therefore often happened that the enhancement brought out by the rate on the occupancy or ordinary land held by an absolute-occupancy tenant was so large that a margin on the whole deduced rent properly payable by the tenant had to be granted. In some extreme cases, I found that in the village as a whole the revised absolute-occupancy rent was on this account below the deduced rent, although that rent was lower than present payments. The second of the tables shows that 16 per cent. of the gross enhancement imposed is balanced by these reductions in adjustment. Of the total sum added to the rents of the class Rs. 1,525 is due to adjustment and does not represent a real enhancement, and Rs. 676 has been fixed on land held without rent or on pepper-corn rent. The difference between deduced and revised payments is Rs. 5,227. This does not represent the total of margins granted to avoid excessive *per saltum* enhancement and abatements on account of improvement, &c., because a part of these are covered by the excess of some rents over deduced rents. The net enhancement imposed on the class is 18 per cent. The largest percentages of Absolute-occupancy rents.

enhancement are in the Chichanda Group of the Multai Tahsil (23 per cent.), the Dahwa-Dunawa Group (20 per cent), the Masod-Pattan Group of the same tahsil (21 per cent.). None of these percentages are large. The area held in absolute-occupancy right in the first-named group is insignificant, and in the other two the present payments are low.

Occupancy rents. 226. No less than 25 per cent. of the gross enhancements in this class is due to fixation on the enhancements referred to in the last paragraph and adjustments chiefly with absolute-occupancy rents under the circumstances described under the head of absolute-occupancy rents. The difference between the total revised and deduced payments is Rs. 3,346, of which a large part is due to abatement for improvements and cane gardens. It would appear at first sight that very few margins were granted to avoid excessive *per saltum* enhancement, but allowance has of course to be made for rents above deduced rent. From the fact that the incidence before revision was 57, *i. e.*, nearly as high as that of absolute-occupancy tenants in spite of the large area of land held without payment, it will be seen that the number of these rents is considerable. The net enhancement imposed is 26 per cent. of the unrevised demand. The enhancement in the following groups exceeds 30 per cent. of existing payments—Atner, Chachundra, Tawa valley of the Betul Tahsil and Khaloti, Aonria-Boredehi, Dahwa-Dunawa and Tawa valley of the Multai Tahsil. In every case the actual amount of individual enhancement is very small, rarely exceeding Rs. 2 or Rs. 3, and a very large proportion of it is obtained by adjustment and fixation on land held without rent.

Ordinary rents. 227. The enhancement in this class is very small, only 6 per cent. on the payments as they stood before revision. Drawbacks for improvements and sugar-cane gardens total Rs. 736, and margins were granted where necessary, but there were so many rents higher than the deduced rents that the revised payments are 118 per cent. of the deduced rent. Thirty-one per cent. of the gross enhancement is due to fixation on rent-free land and adjustment, and 54 per cent. is cancelled by reductions, of which about one-third is due to reductions of high rent, and the balance to adjustment and commutation of grain payments.

General remarks
on revision of rent
enhancement per vil-
lage.

228. The range of the percentages of enhancements imposed on tenants' rents is shown by the figures given below:—

Below 1 per cent. in—	Villages.
1— 10	... 248
11— 20	... 415
21— 30	... 285
31— 40	... 76
41— 50	... 23
51— 60	... 6
61— 70	... 3
71— 80	... 2
101—110	... 1
	1,060
Reduced in	57
Not interfered with	26
Total	1,143

In those villages in which there is a net reduction of rent, this is due to a number of commutations of batai payments. If the village be small, half a dozen commutations of batai rents will cancel all the enhancements imposed on cash payments. In one small village the net reduction is due to the cutting down of

same exorbitant cash rents. Where the enhancement obtained is over 50 per cent., this is due to some special circumstances, *e. g.*, the village is small and a relative of the malguzar holds land on very low rent or the village is cultivated by the tenants of another, in which enhancement is small. Most of the villages in which the all-round enhancement is 30 per cent. or more, have now a very low incidence and the actual amount of the individual enhancement is insignificant. The average gross enhancement per holding in each class excluding the enhancements in adjustment are :—

			Rs.	a.	p.
Absolute-occupancy tenants	...	...	2	11	0
Occupancy tenants	...	...	1	9	0
Ordinary tenants	...	...	0	9	0

The details of all large enhancements with the facts which justify them are set forth in the assessment notes which are attached to the group assessment reports. The acreage rates for the principal rabi and kharif soils represented by the unit incidence of each class of tenants proper are :—

		Morand II, Gohari.	Bardi.	Retari.
		Rs. a. p.	Rs. a. p.	Rs. a. p.
Absolute-occupancy tenants	...	1 1 0	0 2 10	0 2 1
Occupancy tenants	...	1 1 0	0 2 10	0 2 1
Ordinary tenants	...	1 6 0	0 3 7	0 2 8
All three classes	...	1 2 0	0 3 0	0 2 4

But these are not the rates actually brought out per occupied acre of bardi and retari, since a large part of the area under these soils, which is fallow, is not assessed. I have not got figures showing the total area of old fallow under these soils, but it will be safe to assume that 130,000 out of the total of 170,185 acres of old fallow is bardi and retari. There is roughly 5-times as much bardi as retari in the district, so it may be taken that about 21,666 areas of retari is old fallow and 108,334 acres of bardi. Add the acres of exempt new fallow (*vide* paragraph 209) and the totals of exempt retari and bardi are 31,021 acres and 147,684 acres. Then the actual revised rate per acre on retari is about Re. 0-1-6, and on bardi Re. 0-1-11. The average factor of the land held by malik-makbuzas and each class of tenants may be deduced from the following equation $\frac{\text{rent}}{\text{area} \times y} = \text{unit incidence}$. The value of y is the average factor for the class. The factors ascertained in this way are :—

Malik-makbuza	...	...	16
Absolute-occupancy	...	...	15
Occupancy	...	...	9
Ordinary	...	...	7

229. The table below compares rents paid by sub-tenants with those paid before revision by the tenants who have sub-let their land. The tenant's rent-rate is calculated not only on that part of his holding which is sub-let (this would not be possible) but on the whole holding, while the sub-tenant's rent-rate is calculated of course only on the sub-let land, so that the rates are not paid on exactly the same lands in all cases and so far the comparison is not quite a true one. Still many holdings which appear in the statement (probably the majority) have been sub-let in their entirety, and the figures may be taken to contrast with sufficient

Comparison of revised rents with rents paid by sub-tenants.

The acreage rates of cash sub-rents are compared below with the all-round acreage rates for the district :—

Class.	Revised tenant rate.	SUB-TENANTS' PAYMENTS.		Area sub-let in acres.
		All cast rents.	Habitual cash rents.	
	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Absolute-occupancy ...	0 10 2	1 8 7	1 2 1	6,916
Occupancy ...	0 6 6	1 0 6	1 5 5	12,385
Ordinary ...	0 6 0	0 13 9	0 13 4	6,098
All three classes ...	0 7 0	1 2 0	1 2 7	25,399

These figures indicate that the revised rents are rather less than half a competition rent.

230. If the true percentage increase in the pressure of the revised rents over that of the rents of 1864 be calculated in the way exhibited by the extract from the Rent-rate Reports for Tapti Group (paragraph 199) it is as follows :—

The true percentage by which the pressure of the revised rents exceeds that of the rents of 1864.

Absolute-occupancy rents about 16 per cent.

Occupancy rents about 15 „

Ordinary rents about 70 „

All three classes about 34 „

231. A special rate was applied to the home-farm in only a very few villages, probably not more than 30 or 40 in the district, so that it is owing to the better average quality of land held by malguzars that the revised valuation of the home-farm falls at a rate per acre higher than the all-round rent-rate on ryoti land. The superiority of the sir land has been shown in the village assessment notes by detailed analysis and comparison of the class of soil in the home-farm and ryoti land. The rate is below that on malik-makbuza lands and about the same as that fixed on land held in absolute-occupancy right. 9,352 acres out of a total of 108,579 acres in the home-farm have been sub-let by the malguzars for Rs. 14,706-5-2, which gives an acreage rate of Re. 1-9-1 as compared with the rate of Re. 0-11-2, given by the revised valuation of the sub-let land. Much of the sub-let sir is held on batai and the sum of Rs. 14,706-5-2 includes a cash valuation of the half produce received for these lands. The acreage rate is therefore not of much value for the purpose of comparison with the revised cash valuation rate. The deduced valuation was Rs. 71,530, which exceeds the valuation adopted by Rs. 3,515. This sum represents the amount of drawbacks from deduced value granted in order to exempt improvements from assessment. The figure at which the home-farm was finally valued was then 95 per cent. of the value deduced from rates. The area held by privileged tenants is insignificant. Much of it is Kotwals' service land which generally consists of 5 acres of rabi land in rabi villages and 10 acres of kharif land in kharif villages.

Valuation of home-farm and land held by privileged tenants.

232. The only remaining item in the assessment assets of a village is the income from the forests, from grazing grounds and the flowers or fruits of forest trees. I have explained in paragraph 194 that as no record of the siwai income of settlement could be found, I had to make a rough estimate of its probable amount. This estimate together with income established by enquiries made at

Siwai income.

attestation and inspection and the income taken for assessment purposes are shown in the table below :—

Source.				Amount at former settlement	Average established by enquiries.	Amount assumed as average for assessment.
1				2	3	4
				Rs. a. p.	Rs. a. p.	Rs. a. p.
Mahua	...	...	...	3,193 8 0	8,208 6 4	5,477 12 0
Harra	...	...	...	193 8 0	14,322 0 3	9,490 0 0
Timber	...	...	...	8,526 12 0	10,996 4 0	8,792 12 0
Grass	...	...	...	88 10 0	273 8 0	243 4 0
Grazing dues	...	...	...	44 0 0	1,102 7 0	798 0 0
Mango	...	...	...	125 12 0	1,115 1 4	703 12 0
Chironji	...	...	...	...	1,415 10 0	937 12 0
Gulli	...	...	...	...	964 6 0	635 12 0
Bamboo	...	...	...	174 8 0	850 8 0	622 8 0
Fuel and Fencing	...	...	...	16 0 0	1,152 12 0	904 0 0
Lac	...	...	...	...	235 1 4	157 8 0
Miscellaneous	...	...	...	...	4,302 12 4	3,187 0 0
Total				12,719 2 0	44,939 2 7	31,950 0 0

The estimate ultimately arrived at was the result of three enquiries : *viz.*, one by the Inspector, one by the Assistant Settlement Officer and lastly by the Settlement Officer. It was very rare to find a malguzar who would admit any income from siwai except in villages where the area of jungle or the number of mahua and harra trees was such that total denial of income was obviously of no use. In many villages malguzars who had signed the Assistant Settlement Officer's estimate in token of its correctness, retracted when I came to inspect. The Inspectors probably had the best opportunity of ascertaining the siwai income, because they were not less than 3 or 4 days in a village, while attesting the papers. Their estimates were almost invariably in excess of that made by the Assistant Settlement Officer, and I generally took a figure lower than that adopted by the Assistant Settlement Officer. I should say that my estimate in column 3 of the statement above is probably little more than half that of the Inspectors. I will indicate briefly the evidence on which the income from the various sources was based.

233. In a few villages evidence of leases of the mahua crop was obtained from the lessees or the leases themselves. Elsewhere the statements of tenants as to the average amount which each household in the village earned by gathering the crop were taken and checked by the statement of the malguzar, and the number of trees in the village, after making allowance for the trees owned by tenants. I was in camp in the district as Deputy Commissioner this year just after the mahua harvest, and enquiries which I made then, backed by inspection of the heaps of mahua waiting to be taken to market, showed that my estimate of income from this source was very moderate. I was particularly careful not to overestimate the mahua income because if this were done, the malguzar would be sure to harass the tenants hereafter by endeavouring to deprive them of their right in the crop, and this would be a serious matter. The crop is a somewhat uncertain one (*vide* paragraph 117). To arrive at the figure included in the assets of the village, I therefore deducted one-third from the estimate. Some idea of the moderation of this estimate may be gathered from the fact that to enable the

Kallars of this district to pay the normal excise revenue on mahua spirit without allowing for any profit, they have to use about 13,535 khandis of mahua, which at the moderate rate of Re. 1-8-0 per khandi, would be worth Rs. 20,000. The normal rate for mahua at harvest time is about Re. 1-4-0 per khandi, this year it was only 12 annas per khandi, because the crop was good and prices of food-grains were low. The price rises to Rs. 5 or Rs. 6 per khandi shortly before harvest time: the rate generally taken in making the estimate of income was Re. 1-8-0 per khandi. The mahua flowers much more freely in cultivated lands than in jungles, moreover much of the crop produced by trees in the forest is eaten by wild animals. Making every allowance for the mahua brought to market by lessees of the crop in Government jungle and tenants and thalwas, the figures given show, I think, that the assessment on mahua falls at an insignificant percentage on the income.

234. Harra supplies a larger income than any other items in the list. The tree grows in large quantities only in the sandstone country and on the Khamla plateau. Elsewhere the trees are not sufficiently numerous to yield the malguzar more than a very small income. I need not repeat here what I have said in paragraph 100 as to the trade in this nut. The malguzar leases the crop to dealers quite as often as he collects it himself. In some villages inspection of the leases revealed the income, in other examination of the lessees afforded the necessary information. In others again where the malguzar denied the income, and the number of trees showed that he must realize considerable sums from this source, an estimate was made by comparing the number of trees with that in villages where the income was established by good evidence. This had to be done in the case of Sitaram Patel, malguzar of Aonria. This man has undoubtedly to thank his harra trees for a great part of the extraordinary improvement in his position since settlement, but he denied that he derived more than a few rupees of income from this source. All the trees of fair size in his villages were counted and a rate per tree applied, which was deduced in the manner indicated above. The sum resulting was reduced by one-third and that again by one-third, giving an income 10 or 12 times larger than that admitted, but certainly well within the average received. The trees flower in May and again at the beginning of August. The flower is delicate and shrivels up at once if it is exposed to the murky condition of the atmosphere which not infrequently obtains in the hot weather, known locally as 'Dhundar.' The August flower is frequently knocked off by heavy storms before it has been fertilized, and the crop which sets then is never a heavy one. Only those trees which have not flowered properly in the hot weather yield a crop worth picking in the rains. In the case of harra, I have allowed the same drawback of one-third on the estimated income. The crop has done very badly for the past four years, and the low assessment placed upon it is amply justified.

Harra.

235. I have described in paragraph 98 the manner in which timber is taken to market. The malguzars never export the timber themselves, but grant permission on payment of a fee which varies from Re. 1-8-0 per karas and Rs. 3 per cart in the wilder parts of the district to Rs. 9 per cart in the Shahpur country. Until 6 or 8 years ago when the existing rules for the management of malguzari forests were issued, malguzars had to take the Deputy Commissioner's permission before cutting timber for sale. The petitions which were presented to the Deputy Commissioner for this purpose were found in the District office and were of some service to me in estimating the income from this source. I had a register prepared showing the number of logs entered in these petitions for each village distinguishing logs cut for sale from those cut for the use of malguzar or tenants. This register was of some use in checking the statement of malguzars who though unable to deny that they had a good jungle, asserted that there was no demand for the timber. Of late years the malguzars have issued licenses on printed forms, and the counterfoils of these were always examined. But of course it could not be presumed that because a large income had been derived from a jungle in the past, it would yield the same income in the future. The jungle might have been overcut, and before finally estimating the income from timber, the incidence per acre of tree forest was always considered. I cannot call to mind any village, except half a dozen on the Berar border, in which my estimate fell at more than 2 annas per acre, and in the majority of cases it was much lower than this. A great part of the area shown in column 10 of Table V at the end of this report as under rock and

Timber.

hill is covered with good tree-forest. The total area of tree-forest may be taken to be about $1\frac{1}{2}$ lakhs acres, and the income assessed falls on this at less than 4 pies per acre. That is to say, if a cart-load of timber per annum were sold off 180 acres of jungle, the income estimated would be received. In villages of which the jungle had been notified for protection owing to evasion of the rules, I submitted my estimate to the Deputy Commissioner for approval. Several malguzars whose forests have been notified since assessment have applied to have their assessment reduced on this account. But that they have foolishly anticipated the income of future years, is not a good ground for reduction of assessment. This would be in fact to put a premium on the evasion of the rules.

Grazing dues.

236. Grazing yields an income only in a comparatively few villages along the Tapti, the Tawa and a few other perennial streams which flow through jungle, a large number of buffaloes are kept in these localities by Gaulis, who make a livelihood by the sale of ghi. These men pay grazing dues generally at the rate of 4 annas per buffalo per annum. This income is augmented by fees paid for agricultural cattle sent from the open villages in the rains. In the north of the district the Gaulis generally pay no special fee, but the malguzar takes an unusually high rent for their maize plots behind the houses, a part of which is really a grazing fee. Cows are never charged for or if any malguzar does make them pay, he is ashamed of it.

Mangoes.

237. Along the large nalas in open black soil country there are often great numbers of wild mango trees. The crop is sold to Kunjras and others in the neighbourhood of large villages, elsewhere no income is derived from the trees.

Chironji and Gulli.

238. The fruit of the achar tree is valued for the kernel which is used by sweetmeat-makers. Gulli is the mahua nut and an oil is pressed from it and used both for softening and preserving leather and by the poorer classes for preparing their food. It is usual to allow the residents of a village to take all the chironji and gulli subject to a payment of 1 paili or half a paili of chironji and 1 kuro or $\frac{1}{2}$ a kuro of gulli to the malguzar.

Bamboo.

239. There is not much bamboo in the malguzari jungles except on the hills north of the Bel. It is extracted in the same way as timber, but the fees are lower.

Fuel and Fencing.

240. It is only in villages near the open country that malguzars have an income from this source. The greater part of the receipts from fuel are derived from the sugarcane cultivators who require it for boiling the juice. In some villages near large towns, the labouring classes pay Re. 1 per house per annum for the right to collect dry wood and sell it in the bazar. Tinsa, lendia and dhaora saplings are generally used for fencing. The income from this source is not large, as the majority of villages have sufficient forest to supply the cultivators with the fencing they require.

Lac.

241. The income from lac is small, because the Gonds will not touch it, so that it is grown only where Korkus are numerous.

Miscellaneous.

242. Under this I have included a variety of items such as income from sale of potter's earth, melon plots in river beds, tamarind, charcoal, &c., none of which are of much importance.

Incidence of siwai estimate on waste area.

243. The whole of the siwai income which is realized only from waste lands, that is all except the income from jungle fruits, falls on the area of waste excluding scrub jungle at only 6 pies per acre. If the area of scrub jungle which yields something in grazing dues and in fencing and fuel be included, the incidence per acre is smaller still.

Total assets.

244. The revised malguzari assets are compared with those of 1864 below. To make the comparison more useful, I have included my estimate of siwai of

1864 in the assets for that year, although it forms no part of the assets as stated in the records. The payments of malik-makbuzas are excluded, as the table is meant to show malguzari assets only :—

Source of Income.	At settlement in 1864.	As revised.	Percentage increase (+) or decrease (—).
	Rs.	Rs.	Per cent.
Payments by tenants	2,68,187	3,97,415	+ 49
Valuation of home-farm and land held by privileged tenants	27,313	73,925	+ 170
Siwai	12,719	31,950	+ 151
Total	3,08,219	5,03,290	+ 63

Of the increase of Rs. 1,29,228 in tenants' payments, Rs. 72,411 was added by the malguzar during the currency of the 30-year settlement, either by enhancement of rents or assessment of encroachments, and land broken up from waste. The balance of Rs. 56,817 has been added on revision of the settlement. Part of the increase in the valuation of sir is due to under-valuation at settlement, part to enhancement on general considerations of the valuation which would have been fair in 1864, and part, and that by far the largest part, to the extension of the home-farm area. The increase in the value of siwai is due partly to the rise in price of commodities which possessed a market value at the settlement of 1864, and partly to the growth of demand for articles, for which the demand at settlement was non-existent, or so small, that the malguzar derived no appreciable income from the produce in question.

245. In villages which contain land held in malik-makbuza right, the first step in determining the revenue of the village is to fix the drawback on the malik-makbuza payments which goes to the malguzar as commission for the trouble and expense of collection. This drawback must ordinarily lie between 10 and 20 per cent. of the total malik-makbuza payments in a village (Article 227 of the Code). Assessment of
revenue demand on
malik-makbuza
lands.

The figures for the district, including ubari payments (*vide* paragraph 265), are :—

Revised payments.	Amount of revised payments taken as revenue payable to Government.	Amount of draw- back relinquished to malguzars.	Percentage of draw- back on revised payments.
Rs. a. p.	Rs. a. p.	Rs. a. p.	Per cent.
6,944 10 0	6,153 3 0	791 7 0	11.3

The percentage of the drawback was always between 14 and 20 per cent. of the demand, except in a few villages in which it was impossible to obtain a multiple of 5, as the revenue payable to Government without slightly exceeding the limits fixed by rule.

246. The rules laid down for the guidance of the Settlement Officer in determining the revenue to be paid on malguzari assets are contained in Articles 230 and 231 of the Settlement Code, and I would not recapitulate them here, but that it is necessary, if an intelligible account is to be given of the way in which they were applied in practice in this settlement. The Code directs that the ordinary minimum and maximum revenue shall be 50 and 60 per cent. of the malguzari assets (*i. e.*, all assets excluding gross payments of malik-makbuzas) Principles govern-
ing the assessment
of malguzari reve-
nue.

respectively. A revenue lower than the minimum may be fixed for special reasons, which are not further specified; but the maximum may be exceeded only when "the present malguzari revenue exceeds 65 per cent. of the malguzari assets, on which the revised demand is to be fixed and has hitherto been paid without difficulty, in which case the revised demand may be fixed at a fraction up to, but not exceeding, 65 per cent."

Fixation of malguzari revenue exceeding 60 per cent. of assets.

247. There are 1,187 mahals (as distinguished from villages) in the district, and in 12 of these the revised revenue falls at more than 60 per cent. of assets. But the 65 per cent. rule referred to in the last paragraph was only brought into play in four of these mahals. In the rest the assets were so small that a revenue of Rs. 5 falls at more than 60 per cent. of assets and as revenue is always fixed in multiples of Rs. 5, a lower percentage could not be taken.

Considerations which affect the share of malguzari assets to be taken by Government.

248. Article 231 enumerates the considerations which should influence the Settlement Officer in determining the share of malguzari assets taken as revenue. The importance of one of these, *viz.*, "the amount of the enhancement" is affected by the orders issued in 1896 regarding progressive assessments, but the rest have been allowed full weight in fixing the Government demand. I will now take up each of these considerations in turn and discuss briefly the part which it has paid in the determination of the revised revenue of this district.

The standard of assessment for the district.

249. The first consideration is declared by the Code to be:—"The share which, looking to the character of the last preceding assessment, to the progress which the district has generally made since the last preceding settlement, and to assessments already effected, may be taken to represent the average or "standard" for the district. The orders of the Government of India which I have referred to in paragraph 193 are an extension of this instruction. We have now a standard of assessment fixed for each tahsil. The standard fixed in the Betul Tahsil was 50 per cent., and in Multai 56 per cent., of assets. In proposing the standard of 50 per cent. for the Betul Tahsil, I stated the reasons for my proposal as follows:—

"Siwai income forms a larger proportion of the assets than is usual: there are a large number of small proprietors: cultivation is in many parts unsettled: malguzars are continually being called on to assist their tenants: in many villages the increase in assets has been very large."

The revenue fixed in 1864 fell at 56 per cent. of the assets of that day as they stood when the estimate of siwai income was included. Subsequent enquiries showed that in those villages in which the estimate had to be based on unchecked reports of patwaris, the income from this source had been over-estimated, and the percentage of assets taken in the Betul Tahsil at settlement appears after correction of this estimate to be 59. It is clear from Mr. Ramsay's Report that he had no intention of assessing this tahsil at such a high proportion of assets, but the failure of malguzars to raise the rents in accordance with his anticipations led to the imposition of an assessment which was not justified by the existing facts and which would not have been easily paid had it not been for the increase in assets afforded by extension of cultivation.

"The character of the preceding assessment" could not therefore be allowed much weight in determining the standard of assessment in this tahsil. The experience gained in other settlements as to the proportion of assets which it is safe to take in a poor country had more to do with the fixation of this standard than any other consideration. Article 321 (1) of the Code recognizes the necessity for taking advantage of this experience in the fixation of a standard in the words "looking to assessments already effected." In the Multai Tahsil the conditions are quite different. The revenue of settlement fell at more than 60 per cent. of the assets, there had been little extension of cultivation, and the assets are secure in all but a few small jungly villages. Many of the villages had changed hands since settlement owing to the extravagance or mismanagement of the malguzars; the majority of them passing to money-lenders who are well able to pay a full demand. Here the character of the last preceding settlement was a consideration which carried much weight. I proposed a standard of 57 per cent. for the tahsil, which was lowered by the Chief Commissioner to 56 per cent. The remaining considerations stated in Article 321 represent the grounds on which any departure from these tahsil standards may be justified.

The security of the assets.

250. In a very large number of villages of the Betul Tahsil and a few in Multai, the degree of insecurity of the assets owing to a large proportion of

assets being furnished by siwai and to the character of the soil being such that in a year of short rainfall crops are seriously affected, is the most important of the circumstances to be considered in the fixation of the revenue. It was considered justifiable on this account to take less than 50 per cent. of assets in more than 300 villages in the district. In half these villages less than 45 per cent. of assets was taken. The lightness of the assessment in these villages will, I think, be admitted, when the ample margins allowed on the proved 'siwai' income are considered. The continued failure of the harra crop for four years in succession has shown how necessary it is to be careful not to over-assess villages in which siwai plays an important part, particularly where the siwai is principally derived from jungle fruits which are liable to failure of crop.

251. If the assets be Rs. 1,000, a 60 per cent. assessment would leave the malguzar an income which would be ample to provide for his own necessities and the management of the village even after deduction of cesses, but a similar assessment on assets of Rs. 100 would after deduction of cesses leave a sum altogether inadequate for the bare necessities of the malguzar. On this principle a smaller proportion of assets was taken in small than in large mahals. A particular case of this condition is where the assets of the mahal have to be divided amongst a large number of shareholders. Exceptions to the rule are small mahals forming parts of large estates or belonging to persons who have large incomes from money-lending or other sources unconnected with the mahals and small mahals in which the malguzar derives a large income from valuable sir land. In a few cases less than 50 per cent. of assets was taken on this account, and more than 50 or 51 per cent. was not taken in any small mahal not falling within any of the exceptions stated above. The amount of assets.

252. This consideration is, if I may venture to say so, stated somewhat loosely in the Code. What is, I think, meant is that where the malguzar's net profits are largely reduced, a smaller share of assets may be taken than in villages in which the profits are increased or decreased but little. The number of cases in which this rule is applicable has been materially reduced by the instructions regarding progressive assessments which were issued in 1896. The amount of enhancement.

253. A progressive assessment means in the words of Government of India's Despatch No. 33 of 1895. "The temporary postponement of a portion of an enhancement which is justified by existing conditions, but which is felt to be too large to impose at once. The system would be better called 'deferred' than 'progressive' assessment." The object of this method of assessment is "not merely to recover a portion of the revenue which it is thought inexpedient to demand at once, but still more to reduce the difficulty of enhancement which may recur at the next revision of settlement" (Government of India's Revenue Department Circular No. 27-383—2 of 16th December 1895). It had been found that in some districts Government had to relinquish a large part of its full share in the increased assets, because to take the normal proportion of the assets would have involved too large and sudden a diminution in the profits of the malguzars. Supposing assets to continue to expand, the amount of revenue lost in this way would be larger with every revision of settlement. So far as the system of progressive assessments enables us to take a proportion of the revenue nearer to the normal, it tends to diminish the loss to which the Government is exposed owing to the rapid increase in the value of landed property and the long term of the settlements. The orders governing the application of the system to this settlement are contained in the Central Provinces' Secretariat Revenue Department letter No. C-499 of 31st October 1896, to the address of the Settlement Commissioner, and are as follows:—"When the immediate reduction of income calculated on the assessable proprietary assets would be 30 per cent. or over, a progressive assessment spread over three or five years according to the extent of reduction and the value of the home-farm would be made; when the reduction of profits is between 20 and 30 per cent., the profits of the home-farm would be taken into consideration in determining whether the assessment was to be introduced progressively or not, and lastly where the reduction would be only 20 per cent. or less, the enhanced revenue would be imposed at once." The following qualifying remarks were added to the instructions:— Progressive assessments.

"In applying the above principles to concrete cases, it must be borne in mind that the rough scale indicated is liable to be modified with regard to the circumstances of the proprietors; that is to say, a wealthy purchaser in no way dependent on the village, would not require the relief of a progressive assessment at all; or again in the case of a large community of cultivating proprietors, the value of the home-farm might be left out of account in determining the effect of the assessment on the income. Again the character of the previous seasons in the case of small men of little resources would be a factor in the situation."

Practical application of these instructions.

254. In deciding whether a progressive assessment was necessary, the effect of the revision of settlement on the basis of a normal percentage of assets had to be considered. To enable me to gauge the probable effect on profits of an estate, in which there was reason to believe that the reduction of profits would be large, I had before me on taking up assessment of the first village of the estate, a statement comparing the whole assets of the estate at settlement with the assets as they stood after revision of rents and sir valuation together with the amount of rent enhancement imposed. I then determined what percentage of the assets would ordinarily be considered on general considerations to represent Government's fair share of the income, and ascertained what reduction of profits would result. If it then appeared, either that the reduction of profits did not exceed 20 per cent. or that if a progressive assessment were made, the assessment at the normal percentage of assets would not involve an excessive diminution of the profits, I proposed to adopt this percentage as the average for the estate and to refrain from making or to make a progressive assessment according as the reduction of profits exceeded or fell short of 20 per cent. In a very few cases the effect on an assessment at a normal percentage of assets would have been so severe, that it could not be sufficiently mitigated even by spreading the enhancement over several years, in such cases the estates were assessed at a percentage below the normal and were also granted the concession of a progressive assessment. It was only in the harra country and in the jungly villages, which have developed much since settlement, that this system of deferred assessments was used, and it was unnecessary to apply it in many of the villages falling in this category. In some the increase of assets was not so large as to involve a 20 per cent. decrease in profits, in others the malguzar was a well-to-do man with other sources of income, in some the profits of the home-farm cultivation were very large and many formed only part of considerable estates of which the greater part of the assets was derived from villages in which there had been little development since settlement, so that the net increase in assets of the whole estate was not large. In five estates in the Bhawargarh and Tawa Valley groups, a progressive assessment was refused because the malguzars have shown themselves to be hard and unscrupulous landlords.

Estimates of cultivating profits of home-farm.

255. An estimate of the profits of home-farm cultivation had to be formed for the purposes of the progressive assessments. The information collected at that time as to outturns and expenses of cultivation was not so full as has since been gathered, but the estimates of profit agree fairly well with those indicated by later enquiries. The figures are:—

Profit rate per acre.

Class of soil.	Wheat land.	MINOR CROP LAND.			SUGARCANE LAND.	
		Class I.— Villages of Khaloti Group.	Class II.— Villages of Khaloti Group.	Other villa- ges.	For thewans under cane.	For thewans under rabi.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Kali II	6 4 0	...	...	...	100	10 8 0
Morand I	5 8 0	4 4 0	4 0 0	3 12 0		9 4 0
Do. II	4 4 0	3 4 0	2 12 0	2 8 0	50	7 0 0
Mutabarra	2 12 0	2 0 0	1 12 0	1 8 0	30	4 12 0
Sihar	...	...	...	...	...	...
Bardi	...	1 0 0	1 0 0	0 12 0	...	...
Retari	...	...	...	...	...	...

The information given in paragraph 107 shows that these estimates are rather too low than too high.

256. The actual as well as the proportionate amount of the reduction in profits was considered in determining the number of years over which the enhancement of revenue should be spread and the steps by which the full demand should be reached. Where the total amount of assets was small, a drawback was granted for two years only and the full revenue was reached in the third year. In other cases the final demand was deferred till the fifth year and was reached by two progressive steps. In the first class of cases of which few were found, the first step of the settlement was so fixed that about half the reduction of profits should take effect at once and the remainder when the full demand was taken in the third year. In the second class I always proposed to fix the first step so as to distribute the reduction of profits as follows:—

Determination of the amount of drawback to be allowed.

By 1st step	...	50 per cent.
„ 2nd „	...	25 „
„ 3rd „	...	25 „

257. The table below shows the financial results of the application of the system of progressive assessments:—

Financial results.

No. of estates in which progressive assessment granted.	No. of villages in which progressive assessment granted.	AMOUNT OF REVENUE RELINQUISHED TO MALGUZARS.		
		In 1st two years.	In 2nd two years.	Total.
		Rs.	Rs.	Rs.
71	182	12,780	3,730	16,510

The whole of the amount of revenue relinquished will not however be lost because the concession is by the terms of the agreement with the malguzar not extended to any transferee otherwise than by inheritance. Some of the villages concerned have already changed hands by sale or foreclosure of mortgage since their assessments were announced and others will no doubt be transferred before the full demand becomes payable.

258. In the Betul Tahsil, except in the Betul Group, assets have increased so largely since settlement that it was rarely possible to take a larger revenue than would otherwise have been taken on the ground that a large percentage of assets was taken at settlement. It could not be said that as the village had been assessed to a high percentage of revenue at settlement, therefore it was capable of paying a high percentage now. Because it was possible that but for the increase in assets the revenue could not have been paid so easily. But in the Multai Tahsil this consideration was frequently of much importance. In a number of mahals in which there was no reason to suppose that too large a proportion of the assets had been taken at settlement, the existing revenue was so large that even if the maximum of 60 per cent. were now taken, the net profit of the malguzar would be increased. In other words, the sum added to rents was larger than the maximum amount which it was possible under the rules to add to revenue. Some mahals were found in which there was reason to believe that the percentage of assets left to the malguzar at settlement was less than sufficient to enable him to live and manage the village without running into debt, and in those cases a low percentage of assets was taken, even though by so doing the profits were increased.

The share which was taken at the last preceding settlement.

The way which the proprietors acquit themselves of their responsibility as such.

259. "A proprietor who has spent money on improvements, who takes an interest in the management of his village and whose relations with his tenants are good deserves more lenient treatment than one who manages his village on purely commercial principles" (Article 231 (b) of the Settlement Code) and it may be added the commercial malguzar is able to pay a larger percentage of assets as revenue since he spends less on management.

The circumstances of the malguzars.

260. Indebted malguzars have been treated with leniency unless it was clear that they were already hopelessly ruined and that the difference of a few rupees in the revenue could make no real difference to them. On the other hand, the fact that a malguzar is very well-off or that he has other sources of income has been considered to justify a full assessment in villages where no circumstance pointing to the necessity for leniency existed. In this connection I may mention the case of poor jungly villages with insecure assets held by well-to-do sahuikars. Under ordinary circumstances we take a small percentage of assets in these villages because it is probable that in some years a considerable part of the assets will not be realizable. When we take a small proportion of the assets on the ground of the poverty of a malguzar, we do so because it is considered that even if he collects the whole of the assets every year, the balance left to him, if a large percentage be taken by Government, will be insufficient for his wants. In a village of the first class the defect which necessitates a low revenue is inherent in the village and exists whether the malguzar be a well-to-do man or not. The defect in the other case is in the malguzar and vanishes if he be a well-to-do man. If we assess a village with insecure assets at a higher jama than the normal on the ground that the malguzar is well-to-do, this means really that we expect him to supplement the insufficient assets of the village in bad years from other sources. When assessing the Bhaidehi Group, I put these arguments forward as justifying a low assessment on poor jungly villages even if the malguzar be a wealthy sahuikar, but they were not accepted. Still in practice I do not think that more than 50 per cent. of assets was taken in any such village though the proportion was larger than it would have been but for the circumstances of the malguzar.

The manner in which the malguzar has acquired the village.

261. This is, I think, a special case of the consideration discussed in paragraph 252 regarding the diminution of profits. If a malguzar has only lately come into the enjoyment of the income from the village, a considerable reduction in the income will not be of such moment to him as if he had been regulating his expenditure on the basis of this income for many years. This consideration, combined with that referred to in the preceding paragraph, justified in many cases, especially in the Multai Tahsil, the fixation of the revenue at a large percentage of assets.

Range of percentages of revenue on assets.

262. I show below the range of the percentages at which the revenue falls on the assets of the 1,187 mahals in the district:—

Percentage of revenue on malguzari assets.	Number of Mahals.	Percentage of revenue on malguzari assets.	Number of Mahals.	Percentage of revenue on malguzari assets.	Number of Mahals.	Percentage of revenue on malguzari assets.	Number of Mahals.
12	1	37	5	49	70	61	2
16	1	38	7	50	181	62	1
17	1	39	14	51	40	63	1
18	1	40	47	52	63	64	3
19	2	41	25	53	64	66	1
23	2	42	25	54	39	71	1
28	1	43	29	55	61	83	1
29	1	44	20	56	28	100	2
31	2	45	41	57	42	Nil	1
33	3	46	41	58	45		
35	2	47	26	59	102		
36	3	48	40	60	99	Total ...	1,187

Of the 46 mahals in which the revenue is less than 40 per cent. of assets, a part of the revenue has been assigned in 12 and the percentage being that of the realizable revenue on the total assets, is naturally very small. The remainder are villages in which owing to the insecurity of the assets, it was necessary to fix a light demand, or in which the assets are so small that in order to obtain a multiple of 5 for the revenue, the percentage had to be fixed below 40. I have explained the reason for the incidences above 60 per cent. in paragraph 246. In 410 mahals less than 50 per cent. of assets has been taken : in 278 mahals from 50 to 55 per cent. : and in 499 mahals more than 55.

263. The revised malguzari revenue is compared with that of the 30-year settlement below. For the present purpose I have assumed that 90 per cent. of the small malik-makbuza payments of settlement is included in the total revenues, and 10 per cent. is commission taken by the malguzar :—

MALGUZARI REVENUE.		INCREASE.		INCIDENCE PER ACRE IN CULTIVATION OF—		Incidence of revised revenue per acre of normal cropped area.
At settlement.	As revised.	Actual.	Per cent.	Settlement revenue on settlement area.	Revised revenue on present normal area.	
Rs.	Rs.	Rs.		Rs. a. p.	Rs. a. p.	Rs. a. p.
1,85,655	2,70,428	84,773	46	0 4 3	0 4 6	0 6 7

The rates per acre are however not true because a considerable part of the jama falls on siwai income. By examining every mahal in which there is any siwai income, the exact portion of the revenue which falls on siwai might be ascertained, but it is not worth while to take so much trouble when a rough estimate will be enough for the purpose. 45 per cent. of the estimated siwai income will be a moderate estimate of the amount of revenue which is payable from siwai, this leaves a balance of Rs. 2,56,000 on agricultural lands. The incidences per acre of normal cultivated and cropped areas are then Re. 0-4-4 and Re. 0-6-3. The malguzari revenue immediately before revision was larger by Rs. 1,729 than that fixed at settlement, chiefly owing to the addition of revenue which is paid on clearance lease villages in which malguzari right has been granted since settlement. The revised malguzari revenue as finally announced is 54 per cent. of the assets, while in the 30-year settlement 60 per cent. was taken.

264. The gross realizable revised revenue, *i. e.*, malguzari and malik-makbuza payments is Rs. 2,76,030, or Rs. 85,371 more than that of settlement. The percentage of enhancement is 45. Gross revenue.

265. Out of a total sum of Rs. 84,222 added to the malguzari revenue, Rs. 56,817 is covered by enhancements of rents, and the malguzars' profits are reduced to the extent of the balance, *viz.*, Rs. 27,405, or 10 per cent. per annum of the profits as they stood before revision, if only rental value of home-farm be included. But their profits still remain considerably larger than in 1864. At that time the malguzars were left with a net cash profit of Rs. 1,22,564 besides cultivating profits on 61,436 acres of home-farm. They have now a cash profit of Rs. 2,33,413 plus cultivating profits of 108,579 acres of home-farm. The cash profit is 90 per cent. larger, and the sir area is 76 per cent. greater. The soil is no doubt of lower average quality than at settlement, but owing to the rise in prices, the produce per acre is probably worth more now. If cultivating profits of sir be included the net profits now left to the malguzar are probably about double what they were at the beginning of the term of the 30-year settlement. In the three best groups of the Multai Tahsil and in the Betul Group, the profits of the malguzars are increased by some thousands of rupees. Elsewhere they are reduced more or less. The remarks in paragraph 252 will show what has been considered the maximum reduction of profits permissible *per saltum*, and when mitigated by the concession of a progressive assessment. Effect of revision of settlement on the profits of malguzars.

Assignment of
revenue.

266. Details of the revenue assigned are shown in the table below under the classes into which the muafi register is divided under standing orders. The assignments amount to Rs. 1,144-5-9 on villages, and Rs. 710-3-4 on plots:—

Revised Table of Assignments of Revenue.

Class of muafi.	Village or plot.	Tahsil.	Number of villages or plots.	UNREVISED.		REVISED.	
				Realizable jama.	Kamil-jama.	Realizable jama.	Kamil-jama.
Class A.—For life or lives ...	Plots	Betul Multai	6	Rs. a. p. 69 2 2	Rs. a. p. 136 0 0	Rs. a. p. 103 0 0	Rs. a. p. 206 0 0
			2	4 0 0	8 0 0	8 0 0	16 0 0
		District Total	8	73 2 2	144 0 0	111 0 0	222 0 0
Class C.—Subject to definite conditions.	Whole villages	Betul	1	Nil.	175 0 0	Nil.	245 0 0
			2	Nil.	9 0 0	Nil.	24 0 0
		Betul	6	152 0 0	330 0 0	480 0 0	870 0 0
Class D.—Subject to indefinite conditions or to no conditions.	Whole villages	Multai	6	348 0 0	670 0 0	420 10 3	930 0 0
		District Total	12	500 0 0	1,000 0 0	900 10 3	1,800 0 0
		Betul	16	160 1 4	403 5 4	437 0 0	744 6 0
Plots	Plots	Multai	28	132 4 0	517 0 0	679 12 0	947 9 4
			44	292 5 4	920 5 4	1,116 12 0	1,691 15 4
		District Total	13	500 0 0	1,175 0 0	900 10 3	2,045 0 0
GRAND TOTAL ...	Whole villages	...	54	365 7 6	1,073 5 4	1,227 12 0	1,937 15 4
			Plots				

The muafis of Class D are all conditional muafis which were commuted to perpetual unconditional "ubaris" under the scheme originated by Sir Richard Temple in 1867. I found that a great many of these ubaridars were under the impression that under the terms of the commutation the amount payable and not the share of kamil-jama payable had been fixed in perpetuity. The record showed that the terms had been duly explained at time of commutation and that the muafidars had elected to commute. Most of these assignments were originally made in return for service as "deshmukh" or "deshpandia," for military service or for suppression of dacoity along the main roads. A few are held for religious purposes.

267. The amount of enhancement justified by statistics which has not been taken may be roughly gauged as follows:—

Amount of justifiable enhancement relinquished.

If rents of absolute-occupancy, occupancy and ordinary tenants had been enhanced all-round 50 per cent. above the settlement rates, the sum obtained would have been Rs. 1,68,528 more than that actually taken by enhancing them 34 per cent. (true percentage of enhancement) above the settlement rate. The revised acreage rate of the home-farm and land held on privileged terms is Re. 0-10-1. I have not the total figures of sir valuation of settlement, but if it be valued at the all-round rate of settlement, which is as I have already shown more than a fair rate in the Betul Tahsil, and less than a fair rate in the Multai Tahsil, it appears that the revised rate is a little more than 50 per cent. above that of settlement. The sum that might have been added to malguzari assets beyond the enhancement actually imposed is then Rs. 1,68,528. Applying to this the percentage at which the revised malguzari revenue falls on the malguzari assets, it appears that a sum of Rs. 91,000 might have been assessed on malguzars in addition to the revenue actually taken. To this must be added the sums relinquished in villages where a progressive assessment has been imposed. Altogether the revised revenue is about Rs. 1,00,000 lower than that which the orders on the preliminary reports considered to be justified by statistical considerations.

268. The actual percentages of rent enhancement and the revenue finally obtained are compared below with the forecasted percentages and revenue which were approved by the Government of India:—

Comparison of results of revision of settlement with the forecast sanctioned by Government of India on Tahsil preliminary reports.

Class of Tenants.	PERCENTAGE OF ENHANCEMENT IN			
	BETUL TAHSIL.		MULTAI TAHSIL.	
	Approved by Government of India.	Obtained.	Approved by Government of India.	Obtained.
	Per cent.	Per cent.	Per cent.	Per cent.
Malik-makbuza ...	20	51	25	56
Absolute-occupancy ...	20	16	22	19
Occupancy ...	20	24	22	28
Ordinary ...	3	7	5	4

The above percentages are all within the limits allowed by rule except that on malik-makbuza payments. The reason for the large enhancement on this class is explained in paragraph 224. They hold only about 7,000 acres. The malguzari revenue obtained by applying the sanctioned standard percentage of assessment to the revised malguzari assets is compared below with the revenue finally determined:—

	Betul Tahsil.	Multai Tahsil.
	Rs.	Rs.
1. Revenue obtained by applying the sanctioned standard percentage to revised assets. ...	1,46,558	1,17,697
2. Revised revenue ...	1,52,960	1,16,916
3. Percentage difference between 1 and 2 ...	4 per cent.	0.6 per cent.

The difference is well within the limits fixed by rule.

269. The revised demand is Rs. 10,550 smaller than that of the 5-year settlement, which lasted from 1817 to 1822, and Rs. 20,430 larger than the

Comparison of new demand with old assessments.

average annual collections during those five years. Mr. Ramsay says that the price of wheat during the period ranged from 16 to 43 seers per rupee; the latter rate obtaining during three out of the five years. Without taking into consideration the increase in occupied area, we may suppose, I think, that the revenue which was collected when prices were little more than one-third the present figure can without difficulty now.

SECTION VIII.

VILLAGE WATCHMEN.

Scope of Settlement Officer's proceedings with reference to Kotwars.

270. Articles 289 and 290 of the Settlement Code, direct that the Settlement Officer shall make any changes in the number of village watchmen which may be required to give effect to the rules under Section 147-A of the Land Revenue Act, and shall at the same time fix the remuneration to be allowed to them, commuting fees in kind into a cash contribution to be made by malguzars and ryots at a rate on the rent or rental value of their land. To have altered the number of kotwars in a village and left it to the Deputy Commissioner to decide which of the incumbents should be discharged, would have involved much needless delay and trouble. So it was arranged that the announcing officer should enquire into the claims of rival incumbents and select, with the approval of the Settlement Officer, those to be maintained in office. As the Settlement Officer has no power in law to do more than determine the number of kotwars, any orders passed regarding the personnel of the kotwars were really only recommendations to the Deputy Commissioner. The register of kotwars supplied to the Deputy Commissioner embodied the proposals of the Settlement Officer with regard to the personnel as well as to the number of appointments and remuneration, and kotwars were informed of his decisions on all three points, and were directed to apply to the Deputy Commissioner if they were dissatisfied with the orders on the first part of the subject. The Settlement Officer's proposals were always made after consulting the Police and the Tahsildar, and the Deputy Commissioner accepted all recommendations regarding the selection of incumbents whose services should be dispensed with on reduction of establishment, unless the kotwar concerned petitioned against the order discharging him, in which case the Deputy Commissioner satisfied himself by independent enquiry that the right incumbent had been selected for dismissal. As I was Deputy Commissioner for a great part of the period during which announcement was going on, the matter was in the majority of cases settled by a single decision.

Reduction in the number of Kotwars.

271. The rules framed under Section 147-A of the Central Provinces Land Revenue Act, direct that there shall be at least one watchman for every inhabited village, except where, with the sanction of the Commissioner, a group of small contiguous villages is placed in charge of a single watchman. Subject to this rule, the minimum number of houses in charge of a watchman should be 50, and the maximum 200. This latter part of the rules is permissive only and merely indicates the standard to be aimed at. The number of village watchmen in this district was found to be much in excess of the necessary staff. Some little hamlets of 30 or 40 houses supported two kotwars, and the larger villages 3 or 4. In addition to the regularly appointed staff there were a number of men, generally one for every kotwar, known as 'bahidars,' or book-carriers, who were the unrecognized assistants of the kotwars and divided the dues with them by private arrangement. Judging by the name by which they are known, these assistants were employed primarily with the object of saving the kotwar the trouble of taking his report book weekly to the nearest police station-house out-post. In the poor villages the dues were rarely sufficient to support both the kotwars and the 'bahidars,' and the result was that both had to supplement their income in some way, usually by labour or cultivation, and this of course interfered with the proper performance of Government duty. In the larger villages, although the dues were considerable, they were divided amongst a large number of kotwars and 'bahidars' so that the income enjoyed by each individual was sometimes little larger than in a jungle village. And even where there was no need for them to have recourse to other means of livelihood, the system weakened the kotwar's sense of his responsibility

and inclined him to be careless in the discharge of his duties. It was moreover directly opposed to the rules. Kotwars have now been given to understand that they must not delegate any part of their duties to bahidars. I have been very cautious in clubbing villages under one kotwar and have never done so, unless it was impossible to provide for the remuneration of the watchman in any other way. In most cases villages that have been grouped in one circle at the revision of kotwar arrangements were similarly grouped before. Exceptions to this are some uninhabited villages in the open parts of the district. The kotwar of such places had perhaps to work twice or thrice in the year, *viz.*, once or twice when the patwari was writing the khasra, and again if any one came to inspect the village. He was in fact quite superfluous and his duties were an unnecessary burden on the cultivator. Where possible these posts have been abolished and the villages allotted to the kotwar of the village in which most of the cultivators live. My action in regard to the abolition of superfluous kotwars in villages, in which the number of posts was excessive, has been largely influenced by the question of their remuneration. Generally speaking, there are two classes of cases in which I maintained a number of kotwars in excess of the standard minimum, *viz.* (a) where great hardship to a deserving man would have been involved in any reduction of the establishment, (b) where the tenants and malguzar particularly desired that no reduction should be made. In both cases I did not refrain from taking action unless a sufficient cash remuneration could be provided by a rate per rupee of rental not exceeding the maximum of one anna. The minimum cash remuneration of a kotwar is declared by the Settlement Code to be Rs. 36, and this was rarely exceeded by more than Rs. 5 or Rs. 10, and in the jungle tracts sanction was accorded to a minimum as low as Rs. 25. Now a farm labourer paid by the year earns a wage in the open villages, of which the cash equivalent is about Rs. 30, and in the jungly tracts about Rs. 25. A casual labourer no doubt earns less, but still even his earnings would not be very much smaller than those of the average kotwar. So that the position of a kotwar dismissed on a reduction of establishment was as a rule little worse than it would have been had he been maintained on the new system of cash remuneration. In many cases too the kotwar had a small service holding (5 acres of rabi land or to acres of kharif land) which he continued to cultivate on payment of rent after the abolition of his appointment. The reduction of establishment, which in the average case involved little hardship, was still less prejudicial to the interests of the dismissed kotwar in a large number of villages. In small villages where there was more than one kotwar, the divided dues represented generally an insignificant quantity of grain, and the kotwar's condition was little if at all better than that of a casual labourer. When bahidars existed also, as was generally the case, each man's share was smaller still. To abolish the post of a kotwar in such a village involved no real hardship. In the larger villages it not infrequently happened that one of the incumbents had cultivation in tenant right and would be in a position to support his family in sufficient comfort without the addition of a share of the dues. In some instances, indeed, it was found that kotwars had such large cultivation that it must have interfered materially with the proper performance of their duties. Sometimes the record of one of the incumbents was so bad that he deserved no consideration, or the kotwarship had been in the family of one of them for a short time only. There were before revision 1,228 kotwars in 1,143 villages, of these posts 180 were abolished, and the number of kotwars is now 1,048.

272. The kotwar's remuneration under the wajib-ul-arz of the 30-year settlement was composed of the following items:— Former remuneration.

Service land rent-free (5 acres of rabi, or 10 acres of kharif)

Two kuros of grain per plough. Four seers each at seed and harvest time.

One seer gur per cane garden at the time of boiling.

One day's gleaning.

Eight annas for each 'pat' marriage.

Six pies on a death.

Six pies for putting up garlands of leaves at a feast or ceremony.

A few mahua trees.

The hides of all cattle dying in the village.

'Rotis' on the occasion of a festival.

Of these the perquisites at seed and harvest time, the gur and the gleaning though generally granted, were not compulsory, and the kotwar did not always hold service land. In rabi villages the value of the grain perquisites per plough would be about Re. 1, and in villages where there is little rabi 8 annas. In a good open village of 30 ploughs, where the dues were rendered in rabi grain, the value of all emoluments would be about Rs. 45 per annum without hides: in a village of the same size, where the dues were rendered in kharif grains, the value would be about Rs. 25. The value of the hides varied very much. In villages where sugarcane is much grown, and in those jungle villages to which many cattle are brought for grazing, the income from this source must have been large. The price of raw hides fluctuates a good deal, but I believe Re. 1 for the skin of a bullock is a fair average price, while those of buffaloes fetch from Re. 1-8-0 to Rs. 2. Kotwars allege very large incomes from this source and probably from Rs. 30 to Rs. 40 was often made. The average area of a mixed plough of land for the district as a whole may be taken to be about 20 acres of cultivated land and it may be taken that there are about 40 or 45 thousand ploughs of land, in the district. Then the total value of the dues per plough, assuming that about half was paid in rabi grain and half in kharif, would be about Rs. 31,000; add to this at the rate of 8 annas per tenant for the other perquisites in rabi villages, and 4 annas in kharif villages, and it appears that the total remuneration of kotwars under the old system was about Rs. 42,000. The remuneration per kotwar then was before revision about Rs. 34 per annum or allowing for bahidars about Rs. 20 per annum plus the value of hides of cattle dying in the village.

Revised remuneration.

273. The maximum and minimum remunerations are fixed by the Settlement Code at Rs. 60 and Rs. 36, respectively. But it was soon found that in many small villages it was impossible to secure so large an income with the system of a cash rate on rent, and sanction was accorded to the reduction of the minimum in such cases to Rs. 25. Further, the retention of the existing fees paid in kind was sanctioned in those villages in which even this reduced minimum could not be attained. It was at first decided to allow kotwars to retain their existing right to take hides, but for the reasons given in the extracts from my letters No. 157 of the 30th March 1896 and No. 207 of 23rd April 1896 printed below, I recommended that the *wajib-ul-arz* should be altered in this respect whenever the cultivators of the village desired to keep the hides, and where it was possible to obtain an adequate remuneration without including the value of hides in the sources of income:—

"I mentioned in submitting the draft *wajib-ul-arz* that some cultivators, especially those in the sugarcane-growing villages, objected to relinquishing the hides of their dead cattle to the kotwar. But as in the Betul Tahsil these tenants were confined to a few villages, and as the kotwar is by custom (recorded in the *wajib-ul-arz* of settlement) entitled to the hides, I recommended that the old condition on the subject should be embodied in the village *wajib-ul-arz*. There was also one other reason for allowing the kotwar to take the hides, *viz.*, that in small villages it would be difficult to make up the minimum remuneration if the kotwar were deprived of the income from hides. I find now that in the Multai Tahsil where irrigation is more largely practised, the cultivators are nearly all much opposed to a continuance of the present custom. They say, and with reason, that it is hard that they should have to pay every year for 'mots' and leathern ropes for their wells, when they could often supply their wants from the hides of their dead cattle, especially when it is not infrequently the hard work of irrigation that has killed them. There will be few villages in the Multai Tahsil where there will be difficulty in providing remuneration for the kotwar even without allowing him to take the hides, and the only objection that I can see to acquiescence in the request of the tenants is that it would be abolishing an old custom, and cutting down the kotwar's remuneration. But the force of this argument is much lessened when it is remembered that the position of the kotwar towards his village was very different in the days when this custom was recorded at settlement. The kotwar was in those days to be regarded as purely and solely the servant of the proprietor (*vide* paragraph 37 of the Settlement Report), and was made use of in many ways by the

malguzars and tenants, who probably considered that they got their money's worth out of him. This is now entirely changed, and the kotwar's time is chiefly taken up with duties, which, though directly or indirectly connected with the welfare of the village, are often not recognized as such by the ignorant cultivators, the performance of which, moreover, very often results in the harassment partly necessary and partly unnecessary of the tenants and malguzar. The income from hides in a large sugarcane-growing village is considerable. A good many cattle are worn out every year by the hard work at the well, combined with insufficient food and those which do not actually die from overwork, are often rendered specially liable to be attacked by disease when weak and emaciated. In some of these villages the kotwars are in very comfortable circumstances, and not infrequently engage in small money-lending transactions. There is no doubt that they would be much more prosperous if they did not spend the major part of their income in drink. There is every probability of these men getting above their work, and from this point of view it would be a good thing to curtail their emoluments. One very cogent reason for acceding to the request of the cultivators is that (if I am not mistaken) the popularity of a settlement is much affected by matters of this sort. It may of course also be urged that if the kotwar's remuneration depends largely on the number of bullocks that die, he has a strong motive to kill them, and so increase his income. There are some villages in the east of the tahsil which were transferred after settlement from the Chhindwara District. Their wajib-ul-arz contains a clause that persons who used to take the hides before settlement shall continue to take them, and in some of these villages it is the owners of these cattle who take their hides. Considering the strong wish of the cultivators to dispose of their dead cattle's hides themselves, it is highly likely that to allow them to do so in these villages, and to prohibit them from doing so in neighbouring villages, would lead to much discontent."

"In this district it is the practice for all kotwars, except those of the smallest villages, to keep a 'bahidar' or assistant. This man does a large part of their work, and takes a share up to one-half of the 'hak.' It is clearly not in accordance with rule that there should be such a division of labour and perquisites, and at announcement, it will be clearly stated that kotwars may not make over any portion of their duties to an unauthorized assistant. If they are deprived of the income from hides, they will still have enough for themselves, but not enough to pay another man to do their work. It seems highly probable that the custom of allowing kotwars to take the hides, is largely responsible for this peculiar system of 'bahidars'."

This proposal was sanctioned subject to the modification that some commutation in the shape of food perquisites should be arranged in those villages in which kotwars were deprived of hides. This was in accordance with existing practice in a few Gond villages in the south of the district, and it was provided in the wajib-ul-arz that so many 'rotis' per week or month should be rendered to the kotwar in lieu of hides. The sources of the kotwar's remuneration in villages where the new system of cash fees is in force is then :—

A cash rate per rupee of rental paid by tenants and of the rental value of home-farm.

Service land as before.

Hides or 'rotis' in lieu of hides.

Mahua trees as before.

The remuneration in the best villages ranged from Rs. 36 to Rs. 50 per annum. This amount included only rental value of 5 acres of rabi service land and not cultivating profits. In poor villages it was lower than this. But I made it a rule that where the total remuneration (*i. e.*, including 'rotis' or hides and value of mahua) obtainable with a cash rate was less than Rs. 28 or Rs. 29, the old fees in kind should be maintained. This ensured that owing to over-estimation of the miscellaneous income or a temporary future falling-off in cultivation, the kotwar's remuneration should never be less than Rs. 25. In villages in which the old fees in kind were maintained, the only alteration made was to assess a minimum cash payment on the malguzar in the same way as was done in other villages. Malguzars had up to date paid nothing to kotwars unless they had cultivation in the village. The old fees in kind were maintained in 352 villages, all of which lie in the jungly parts of the district.

274. In some poor villages in which a large part of the assets is covered by siwai income, I availed myself of the discretion allowed by the Code to fix the malguzar's minimum at a higher rate than that usually adopted. In a few cases in which it was proposed to group villages under one kotwar, malguzars offered to pay more than the fixed minimum of $\frac{1}{4}$ th of cash emoluments in order that they might retain their separate kotwar. In all other villages, the malguzar's minimum was fixed at about $\frac{1}{4}$ th of the cash emoluments as laid down in the Code.

Assessment of
malguzar's share of
remuneration.

SECTION IX.

REVISION OF THE PATWARI HALKABANDI REMUNERATION.

Arrangements
before revision.

275. Until 1822 the patwari existed only as a private servant of the malguzar: many villages were not provided with a patwari. In that year the Deputy Commissioner organized a staff of patwaris who were Government servants and liable to punishment without reference to the patel. They continued to be paid as before partly by the malguzar and partly by the tenants, the bulk of the payments by the latter being in kind. This arrangement, with some alteration from time to time in the limits of the patwari's circles and the emoluments enjoyed by them, continued until the settlement which forms the subject of this report. The last re-adjustment of the circles before revision of settlement was effected by the Deputy Commissioner, Colonel MacDougall, in 1885. His proposals, which were sanctioned by the Chief Commissioner, gave the district 174 patwaris. Under the wajib-ul-arz of the 30 years' settlement patwaris were entitled to collect from tenants 1 kuro of grain per annum from every tenant in the circle: this was known as the 'merh kuro' or boundary kuro: and 4 annas per annum per tenant, known as the 'farkhatawan' or payment for writing the 'farkhat' or account of rent. They received also a payment of varying amount from the Patwari Fund, which was formed by a cess collected in cash from the malguzars by Government. After the revision of the arrangements which was made in 1885, the money value of the estimated emoluments totalled Rs. 21,926. It is, however, probable that the patwaris really drew more than this in 1885, and increase in cultivation had materially increased their collections from tenants in 1896, when the revision of the arrangements was again taken in hand. Detailed enquiries showed that in that year the patwaris were actually drawing from tenants and the treasury together about Rs. 28,110 per annum, although they were not entitled under the terms of the wajib-ul-arz to more than Rs. 25,853.

Alterations in
Circle limits.

276. Owing to increase in cultivation some of the circles had become inconveniently large and required sub-division. There were also 11 patwaris employed solely in keeping the records of the numerous small patches of summarily settled land situated in the Government forest. The villages included in these patch-cultivation circles were scattered over large areas of jungle interspersed with malguzari villages: many of these patches of cultivation were made over to the Forest Department as being unfit for permanent settlement as ryotwari villages, and it was obvious that the balance remaining could be more economically managed by the patwaris of the adjacent malguzari circles. The net increase in the number of patwaris in the district was not so large as it would otherwise have been owing to the absorption of these patch-cultivation circles.

So far as this could be done without sacrificing local knowledge to an undesirable extent, the limits of circles were altered so as to give the following areas of cultivated land to circles of different classes, *vis*:—

- (a) circles containing much shifting cultivation on bardi and retari soil 4,000 acres;
- (b) straggling jungly circles, 3,000 acres to 3,500 acres.
- (c) open circles with settled cultivation, 5,000 acres.

It was impossible to avoid a considerable number of alterations in circle limits, but the loss of local knowledge has been small, because such a small proportion of the patwaris of the district have been long in their circles. The total number of circles affected by the alterations sanctioned is 100, but only 125 villages lay in circles held by men who had any local knowledge.

The average areas of cultivated land in circles falling in the three classes differentiated above are:—

- (a) 4,554 acres.
- (b) 3,896 acres.
- (c) 4,840 acres.

The total number of circles after revision is 191 or 17 more than the number previously existing.

277. Besides altering the circles so as to make them suit altered conditions, effect had to be given to the orders of Government under which a cash rate on the rental was substituted for the old 'merh kuro' and 'farkhatawan.' Alteration in remuneration.

The alteration in circle limits of course involved changes in the amount of that part of the patwari's emoluments, which are collected by himself from the tenants, and corresponding alterations had to be made in the payments from the treasury. At the same time advantage was taken of this opportunity to make some changes in the amount of the total emoluments of each circle with the object of reducing the salary of the most desirable circles and increasing that of those least sought after. The circles were divided into six classes, and the standard salaries shown below were adopted as a guide :—

	Rs.
(a) Small open circles	100
(b) Large open circles	135
(c) Very jungly circles	135
(d) Rather jungly circles	125
(e) Circles in which for special reasons a specially liberal remuneration is desirable	155
(f) Average circles	120

The necessity for avoiding excessive reduction of emoluments of patwaris of some standing prevented the adoption of these salaries in all circles, but the average revised emoluments of circles of each class approximates fairly closely to the standard proposed. Old patwaris, whose salaries were reduced by anything more than quite small sums, have been granted a special allowance for their life-time in addition to their regular pay. The net result has been to reduce the average net emoluments (*i. e.*, after deduction of 8 per cent. for bad debts) from Rs. 3 to Rs. 56 per patwari. Special allowances have been granted to 28 patwaris.

278. These salaries are obtained by a rate of $7\frac{1}{2}$ pies per rupee on tenants' rent and by a cess of $5\frac{1}{2}$ per cent. on revenue. The revised cess produces Rs. 16,963-8-0 as against Rs. 10,112 formerly contributed by malguzars. The income accruing from the rate on rents of course varies with variations in cultivation, but at the time the revision proceedings were in hand, it was estimated to be about Rs. 12,506, as compared with Rs. 18,928 realized under the old system of 'merh kuro' and 'farkatawan' dues. Sources of Patwari Fund income.

279. Seven Revenue Inspectors and one Superintendent of Land Records are entertained to supervise the patwari staff and a Patwari Fund clerk to keep the accounts of the fund. The total sum required to pay for the supervising and office staff, the patwaris and all office expenditure is about Rs. 19,012-12-0. Total expenditure on Land Record Staff.

The receipts total as stated above Rs. 16,963-8-0. Contributions from the provincial balance of the Patwari Fund are therefore required to cover all expenditure.

SECTION X.

OTHER MATTERS INCIDENTAL TO ASSESSMENT.

280. The wajib-ul-arz or record of village rights and customs drawn up at the 30-year settlement consisted of two parts—the tahsil wajib-ul-arz, which was uniform throughout the district, and the village wajib-ul-arz, which dealt with certain details, which vary from village to village. Of the 12 subject headings of the tahsil records, five are now superfluous owing to subsequent legislation, and one was of temporary application only. Of the eleven heads and sub-heads of the village record eight are now unnecessary, either owing to subsequent legislation or to inclusion of the subjects with which they deal in the village khewat or list of proprietors. In framing the new wajib-ul-arz I was guided by the provisions of The wajib-ul-arz.

the tahsil and village forms of the 30-year settlement and by the revised forms used in the Narsinghpur and Chhindwara settlements. The remaining heads of both the old records have now been brought together with alterations and additions where necessary. The only radical alterations are those by which the kotwal's and patwari's fees have been altered from dues in kind to a cash rate, and kotwals in some villages have been deprived of their right to hides. The other modifications were made either with the object of bringing the terms into agreement with the existing law or of removing ambiguity. The most important additions are those which define more fully the rights of the malguzars and inhabitants of the village in the waste and forest and in the village site and plots of land appropriated to special purposes. Particular attention has been paid to the record of the rights of tenants to the produce of mahua trees, and already the value of this part of the records has been frequently demonstrated. The record of rights, as finally sanctioned, will be found at the end of this report.

Protection of
the kadars.

281. The only villages held by lessees are two belonging to Prithvi Palsingh, a Rajput malguzar in the north of the district, half a dozen in the estates of the Korkus of Chanda, and three or four villages on the Khamla plateau belonging to the Kiledar family of Bhaisdehi. These are all poor jungly villages, which the malguzars leased out to local men, because they were unable to settle them themselves. In most of them the lessees have been in possession for many years and have substantially improved the property. They were therefore under the terms of Section 65-A of the Land Revenue Act entitled to be protected against arbitrary ejectment or enhancement of rent. A revised rent was fixed and the conditions subject to which the protected status is granted are included in the wajib-ul-arz of the villages concerned.

Distribution of
profits between
superior and inferior
proprietors.

282. There is only one village in which inferior proprietors exist—mauza Jhitapati near Chhachhundra.

Instalments of rent
and revenue.

283. Under the rule in force when settlement operations began, rent was always payable in the same instalments as revenue. But before any of the revised assessments were announced, the rule was amended so as to permit of the fixation of one set of instalments for rent and another for revenue in villages in which the income from siwai sources was large. This rule was applied in a good many jungly villages. Elsewhere the same instalments were fixed for rents as for revenue. The comparative value of rabi and kharif crops was always taken into consideration as well as the area. I find that tenants generally prefer to pay about half the rent in each instalment quite irrespective of the proportion of area under rabi and kharif crops respectively. This preference is based on nothing more than habit. At last settlement half the rents and revenue were made payable in the first and half in the second kist in the major part of the villages, and having become accustomed to this, the tenants do not like the change. I accordingly paid little attention to the wishes of the tenants in this particular.

SECTION XI.

ANNOUNCEMENT.

Bringing the re-
cord up to date.

284. The revised settlement of the first groups was announced in the hot weather of 1897 and the last in July 1899. As most of the groups had been attested two years before announcement began in them, the attested record of many holdings was not in accord with the facts. The settlement record is to represent the facts as they exist at the time of announcement, so it was necessary to have all alterations brought into the papers. This involved an immense amount of trouble. It was effected as follows. Before malguzars and tenants were summoned to hear the revised revenue or rents, lists of changes were drawn up by the patwaris under the supervision of Inspectors in a form devised by Mr. Ravi Shanker, Assistant Settlement Officer, which showed the details of additions to holdings on one side and subtractions from them on the other. Columns were provided for the soil class of the additions and subtractions and for the calculation of soil units and deduced rent. The statement having been previously

completed in all particulars, was laid before the Assistant Settlement Officer, when the malguzar and tenants came up for announcement and he brought the alteration contained in it on to the ryotwari abstract, by means of marginal notes. Subsequently an abstract of these statements was prepared in jamabandi form (known as the badar jamabandi) and included in the settlement misl. A reference to the badar jamabandi was made in the khasra and original jamabandi against any numbers which appear in the first named paper. Many of the changes affected very small areas, and the amount of trouble involved was quite out of proportion to the net amount of alteration in assets which was the final result of the proceedings. The revised settlement was announced after the famine following on the short rains of 1896, and in the jungle villages a number of holdings were found uncultivated. But in the absence of evidence of a declared intention to relinquish it was not possible to record an uncropped holding as waste. It could not be presumed that the tenant had finally abandoned his holding merely because he had been unable to get seed and bullocks in the famine year. The fact of a Gond or Korku being absent from his village would prove nothing. Being unable to sow his land, he would naturally move temporarily to some more thickly populated part of the country, where he could support himself as a casual labourer. I therefore directed the announcing officers to retain all such holdings on the rent-roll unless there was evidence of a distinct intention to relinquish. It was of course possible that a large number of these absent tenants would not return and that their lands would not be taken up by new tenants for some years. And the inclusion of their rents in the assets on which the revised Government demand was based might have resulted in the necessity for subsequent alteration of the revenue. But events have shown that if the necessity arises at all, it will be in a very few villages only. This will appear more clearly from what I have written regarding alterations made at announcement in the revenue for the term of settlement and temporary reductions.

285. In the first few groups, reductions of jama were proposed and sanctioned in villages of which the reductions in the attested assets, though considerable, were not so large that the sanctioned revenue absorbed more than 60 per cent. of the assets. But subsequently, under orders from the Settlement Commissioner, the Government demand was not reduced unless it fell at more than the maximum of 60 per cent. In a very few villages in which, owing to the breaking up of new land the income from rents or rental value of home-farm had substantially increased since attestation, a few rupees were added to the revenue. In all, the sanctioned revenue was altered in 39 villages and the net difference between the total revenue of the district as originally proposed and that finally announced was minus Rs. 120.

Alterations in the revenue made at announcement for the term of settlement.

286. The revised settlement of the Betul, Narsirabad, Bhaisdehi and Dhaba groups came into force with effect from 1st July 1897, that is immediately after the famine and in the year in which the cropped area of this district reached its lowest ebb. Under instructions from the Secretariat a sum of Rs. 5,577 was remitted on the demand of the revenue year 1897-98 in those villages of these four groups which showed a large deficit in cropped area. The revised rents and revenues came into force in the whole of the rest of the district except the Dahwa-Dunawa, Jaolkhera, Aoria-Boredehi and Tawa Valley groups of the Multai tahsil from 1st July 1898. In common with the rest of the province, this district still showed in 1898-99 a cropped area considerably below the normal, though there was an increase of 40,000 acres on the previous year's area. Measures were therefore again taken to grant remissions in deteriorated villages in which the revised demand was recoverable. I think it will be found that the cropped area of the current year has advanced nearly to the normal in the district as a whole. But a few villages particularly in the Khamapur group and the Khaloti group of the Multai tahsil will probably be found to require some further concessions.

Temporary reduction of jama rendered necessary by the effects of the famine.

Settlement of the Betul group was announced in the hot season. I approached me in a body with a petition on several grounds. I explained

Reception of the settlement by the malguzars and tenants.

the new assessments to them at some length, and pointed out that the revenue enhancement had been very small (only 29 per cent. in that group) and that their profits had actually been increased. They then said if I advised them to appeal, they would do so. As I was responsible for the assessments and saw no reason after hearing what the petitioners had to say to think that they were excessive, I told them that I thought they would gain nothing by an appeal to higher authority; whereupon they signified their intention not to press their objections further. After this a few individual malguzars of other villages applied to me to reduce their assessments, but as I saw no reason to do so, I told them that if they wished a reduction they must appeal to the Settlement Commissioner or Chief Commissioner. Only three of them did so, and these are all members of the Brahmin family of Shahpur. Their appeals have been rejected. A few tenants presented petitions to me against their assessment, but only four rents appeared to me excessive. These four were reduced. Three of the reductions were rendered necessary by mistakes in the record and one by excessive *per saltum* enhancement. No tenants appealed to higher authority.

PART III.

MISCELLANEOUS.

Records.

288. The records of the settlement which have been filed in the district office are :—

- (a) The settlement record of each village, consisting of the map and papers enumerated in Article 267 of the Settlement Code. These have been strongly bound in board and leather covers. A copy has been given to the patwaris.
- (b) The assessment papers of each group consisting of the mahal assessment statements, the ryotwari abstracts and the Settlement Officer's village assessment notes, which have been bound together.
- (c) The two preliminary tahsil reports and all rent-rate and assessment reports.
- (d) The dispute lists, enquiries into siwai income, and notes for wajib-ul-arz, which have been taken out of the attestation files and placed in the mauzawar bundles in the record-room.
- (e) Miscellaneous cases connected with the record of rights in land, kotwali appointments, &c. All these have been placed in the mauzawar bundles.

Term of settlement.

289. The dates from which the revised settlement began to run and the date of its termination are shown below for each assessment group :—

Name of Tahsil.	Name of Group.	Date of commencement of term of new settlement.	Date of expiry of term of new settlement.	Remarks.
Betul	Betul	1st July 1897.	30th June 1912.	15 years. Chief Commissioner's Proceedings No. 2628, dated the 17th May 1897.
	Nasirabad	Do.	Do.	15 years. Chief Commissioner's Proceedings No. 3410, dated the 15th July 1897.
	Dhaba	Do.	Do.	15 years. No. 3417,
	Bhaisdehi	Do.	Do.	"

Name of Tahsil.	Name of Group.	Date of commencement of term of new settlement.	Date of expiry of term of new settlement.	Remarks.
Betul. (Concl'd).	Chandu *	1st July 1898.	30th June 1913.	15 years. Chief Commissioner's Proceedings No. 2347, dated the 4th May 1897.
	Khaloti *	Do. ...	Do. ...	15 years. Chief Commissioner's Proceedings No. 4913, dated the 15th November 1897.
	Tapti *	Do. ...	Do. ...	15 years. Chief Commissioner's Proceedings No. 3252, dated the 12th July 1897.
	Khamapur *	Do. ...	Do. ...	15 years. Chief Commissioner's Proceedings No. 5236, dated the 13th December 1897.
	Atnair *	Do. ...	Do. ...	15 years. Chief Commissioner's Proceedings No. 472, dated the 4th February 1898.
	Bhuwargarh ...	Do. ...	30th June 1912.	14 years. Chief Commissioner's Proceedings No. 1740, dated the 18th May 1898.
	Tawa Valley ...	Do. ...	Do. ...	14 years. Chief Commissioner's Proceedings No. 1885, dated the 30th May 1898.
	Chhachhundra ...	Do. ...	Do. ...	14 years. Chief Commissioner's Proceedings No. 1887, dated the 30th May 1898.
	Khaloti ...	Do. ...	30th June 1913.	15 years. Chief Commissioner's Proceedings No. 2164, dated the 23rd June 1898.
	Masode Pattan ...	Do. ...	Do. ...	15 years. Chief Commissioner's Proceedings No. 4032, dated the 16th November 1898.
Multai ...	Chichande ...	Do. ...	Do. ...	15 years. Chief Commissioner's Proceedings No. 617, dated the 10th February 1899.
	Tawa Valley ...	1st July 1899.	Do. ...	14 years. Chief Commissioner's Proceedings No. 615, dated the 10th February 1899.
	Auroria ...	} Do. ...	Do. ...	14 years. Chief Commissioner's Proceedings No. 2197, dated the 5th June 1899.
	Bordehi ...		Do. ...	14 years. Chief Commissioner's Proceedings No. 3027, dated the 28th July 1899.
	Jaolkhera ...	Do. ...	Do. ...	14 years. Chief Commissioner's Proceedings No. 3879, dated the 5th September 1899.
	Dahwa ...	} Do. ...	Do. ...	
	Dunara ...		Do. ...	

NOTE.—In groups marked * new settlement was sanctioned to take effect from 1st July 1897, but they could not be announced before February 1898, consequently the new settlement in these groups begins from 1st July 1898 and expires on 30th June 1913.

290. The cost of the settlement has been up to date Rs. 1,86,156-6-3 distributed under the following main heads:— ment.

	Rs.	a.	p.
Establishment ...	1,49,063	0	11
Travelling allowance ...	8,808	10	9
Wages of chainmen ...	5,301	6	2
Rewards to Patwaris ...	82	6	5
Purchase of forms and instruments ...	1,356	11	2
Miscellaneous ...	21,544	2	10

Of this, Rs. 8,277-3-9 should be debited against the excision of culturable land from the Government forest and the subsequent survey and settlement of that area. The famine interfered very seriously with settlement operations. I was with one of my Assistants engaged for four months in relief operations in Multai in the rains of 1897. Subsequently, in 1898, I was placed in charge of the district for four months. A number of the Inspectors were also employed on famine work for a time. By a fair estimate all this added about Rs. 11,176 to the settlement expenditure. If these sums be deducted from the total expenditure, a balance of Rs. 1,66,703-2-6 is left, which falls at Rs. 65-14-9 per square

mile. The cost of traverse and cadastral survey was Rs. 24 and Rs. 33-13-1 per square mile. The total cost of survey and settlement is Rs. 123-11-10 per square mile. The revenue increment is Rs. 85,371, which will cover the whole cost of the operations in four years, and the cost of settlement excluding traverse and survey in two years.

Notice of services.

291. I was fortunate in beginning the settlement with two experienced officers like Babu Jagannath and Mr. Mahadji Naik. Although both of them had to leave the district within a year of the inception of operations owing to ill-health consequent on their exertions in the field season of 1894-95, they contributed largely to the completion of the settlement. Their advice in practical details enabled me to avoid much futile expenditure of time and labour. Shortly after taking leave Mr. Mahadji Naik died in Nagpur and the Government lost a reliable and hard-working officer, whom it could ill spare. Mr. Jagannath was relieved by Mr. Chhote Lal, who, although he had had no experience of settlement procedure, was of great use to me in starting the work in the statistical branch of the office after the first field season. He remained in the district a few months only. On Mr. Mahadji's death Pandit Hari Gunwant, who had till then held the post of Superintendent of Land Records in the district, was promoted to the rank of Assistant Settlement Officer on my recommendation. Mr. Hari Panth remained with me nearly till the completion of the operations. He took part in rent assessment and announcement, as well as in attestation in the fields, and supervised the preparation of the majority of the settlement records in office. He is a conscientious and hard-working officer, who may always be relied upon to carry out orders to the utmost of his ability. Mr. Ravi Shanker was sent to this district to prepare plans for the excision of culturable land from the Government forest. After disposing of this work he took charge from Mr. Chhote Lal on that officer's transfer. He has been of the greatest assistance in rent assessment and the supervision of the statistical office, besides attesting a large part of the district and announcing revised rents in about two-thirds of the villages. He has shown himself to be possessed of more common sense and power of initiative than usual. His good work has been recognized by his appointment to the independent charge of the ryotwari settlements of Chhindwara and Betul. Babu Gulab Singh, who took Mr. Hari Panth's place as Superintendent of Land Records, has been employed for a great part of the time since he has been in this district on matters connected with district administration. He, however, attested about 100 villages to my satisfaction and has supervised much of the work turned out by the vernacular branch of the office. He gave very useful assistance in the preparation of papers connected with the revision of the Patwari halkabandi. The Statistical Superintendents, Wasudeo Rao Halve and Balaji Ramchandra Parkhi, were immediately responsible for the greater part of the work turned out by the statistical branch. Nearly all the Revenue Inspectors staff and the other officials, both permanent and temporary hands, worked hard in and out of the recognized office hours, and the good work done by many of them has, I am glad to say, been recognized by their appointments to better posts. A large number of the patwaris gave a good deal of trouble, but some of them did good work and have been suitably rewarded.

BETUL :

The 20th February 1901.

B. P. STANDEN,

Settlement Officer.



सत्यमेव जयते

List of Appendices.

TABLE	I.—Details of revenue demand as fixed at last Settlement and as existing at time of re-Settlement.
„	II.—Area in Occupation classed according to Soils and Position, &c.
„	III.—Cropped area classified according to Crops.
„	IV.—Details of Village areas.
„	V.—Details of Holdings.
„	VI.—Details of Malik-makbuzas' and Tenants' payments.
„	VII.—Details of Rates per acre of former and revised Ryoti payments.
„	VIII.—Siwai Income.
„	IX.—Rental value assumed for land held by Malguzars and Privileged Tenants.
„	X.—Total assets at last Settlement and as revised.
„	XI.—Revised Assessment as sanctioned as well as announced.
„	XII.—Assessment comparison.
„	XIII.—Net revenue increment for regularly settled areas.
„	XIV.—Wajib-ul-arz of the Betul District.

TABLE I.—Details of Revenue demand as fixed at last Settlement and as existing at time of prior to re-Settlement.

Serial No.	Assessment Group.					LAND REVENUE DEMAND.	
						As fixed at former Settlement.	At time of re-Settlement.
1	2					3	4
BETUL TAHSIL.							
						Rs. a. p.	Rs. a. p.
1	Betul	...	...	...	...	26,665 12 0	26,679 10 5
2	Dhaba	...	...	...	...	6,103 0 0	6,102 13 7
3	Nasirabad	...	...	...	...	16,346 0 0	16,609 0 0
4	Chandu	...	...	...	...	1,810 0 0	1,810 0 0
5	Tapti	...	...	...	...	11,332 0 0	11,345 2 8
6	Betul-Khaloti	...	...	...	...	1,364 0 0	1,567 8 0
7	Bhensdehi	...	...	...	...	7,847 0 0	7,941 0 0
8	Atner	...	...	...	...	11,510 0 0	11,478 12 0
9	Bhawargarh	...	...	...	...	1,198 0 0	1,478 0 0
10	Khamapur	...	...	...	...	3,703 0 0	3,703 0 0
11	Chachundra	...	...	...	...	7,043 0 0	7,035 6 10
12	Tawa Valley	...	...	...	...	3,501 0 0	3,805 13 8
Total for the Tahsil						98,422 12 0	99,556 3 2
MULTAI TAHSIL.							
1	Multai-Khaloti	...	...	...	...	1,538 0 0	1,541 8 0
2	Masod-Pattan	...	...	...	...	32,303 0 0	33,003 0 10
3	Jawalkhera	...	...	...	...	24,874 0 0	24,936 15 4
4	Dahawa-Dunawa	...	...	...	...	21,477 0 0	21,569 2 6
5	Tawa Valley	...	...	...	...	1,147 0 0	1,207 0 0
6	Aonria-Bordehi	...	...	...	...	7,333 0 0	7,448 0 0
7	Chichanda	...	...	...	...	1,910 0 0	1,898 13 7
Total for the Tahsil						90,582 0 0	91,604 8 3
TOTAL FOR THE DISTRICT						1,89,004 12 0	1,91,160 11 5

TABLE II.—Area in Occupation classed

Serial No.	Groups.	Class of Soil.	WHEAT			
			Dol.	Tagar.	Bharkila.	Kohli.
1	2	3	4	5	6	7
			Acres.	Acres.	Acres.	Acres.
						BETUL
1	Betul	Kachar ...	...	...	...	...
		Kali II ...	1'51	44'29	131'14	0'25
		Morand I ...	18'75	1,981'54	1,151'44	38'46
		Morand II ...	16'67	4,394'86	923'46	107'18
		Mutbarra ...	4'28	345'97	88'13	172'69
		Sihar ...	...	29'14	6'28	...
		Retari ...	...	...	...	...
		Bardi ...	...	...	...	...
		Total ...	41'21	6,795'80	2,305'45	318'58
2	Dhaba	Kali II ...	...	...	...	...
		Morand I ...	2'23	98'43	26'46	...
		Morand II ...	13'58	1,826'54	352'24	87'88
		Mutbarra ...	...	554'04	110'81	14'20
		Sihar ...	4'00	305'72	68'89	36'96
		Retari ...	...	...	...	...
		Bardi ...	...	...	...	...
		Total ...	19'81	2,784'73	558'40	139'04
3	Nasirabad	Kali II ...	...	...	...	...
		Morand I ...	7'84	245'90	128'16	67'50
		Morand II ...	43'74	3,448'53	846'75	755'46
		Mutbarra ...	1'00	1,287'60	206'61	376'44
		Sihar ...	31'06	462'28	174'20	101'76
		Retari ...	...	...	...	...
		Bardi ...	...	...	...	...
		Total ...	83'64	5,444'31	1,355'72	1,301'16

according to Soils and Position, &c.

LAND.

Bandhia.	Bandhan.	Irrigable.	(Irrigable) Geunra.	Mamuli or ordinary.	Geunra.	T.
8	9	10	11	12	13	14
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
TAHSIL.						
...	...	...	...	1'30	...	1'30
...	...	...	...	1,659'39	26'45	1,863'03
...	...	...	...	11,274'72	184'78	14,649'69
...	...	...	...	5,111'34	226'59	10,785'10
...	...	...	...	541'11	10'88	1,163'06
...	...	...	...	160'60	14'46	210'48
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	18,748'46	463'16	28,672'66
...	...	...	...	35'08	...	35'08
...	...	...	...	627'02	7'00	761'14
...	8'00	...	...	2,895'21	73'34	5,256'79
...	...	...	...	367'41	35'42	1,081'88
...	...	...	...	763'81	77'00	1,256'38
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	8'00	...	...	4,688'53	192'76	8,391'27
...	...	...	...	4'50	...	4'50
...	...	...	...	1,473'28	25'53	1,948'21
...	...	...	...	7,515'06	190'85	12,800'39
...	...	...	...	1,452'99	61'98	3,386'62
...	...	...	...	1,662'96	118'14	2,550'40
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	12,108'79	396'50	20,690'12

TABLE II.—Area in Occupation classed

Serial No.	Groups.	Class of Soil.	INFERIOR CROP LAND.				GARDEN			
			Mutfarikat.	(Mutfarikat) Geunra.	(Mutfarikat) Irrigable.	Total.	VEGETABLES AND FRUITS.			
							Irrigated.	(Irrigated) Geunra.	Unirrigated.	Unirrigated Geunra.
			15	16	17	18	19	20	21	22
			Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
										BETUL
1	Betul	Kachar	...	...	...	...	...	...	...	...
		Kali II	16'62	...	...	16'62	2'60	1'93	...	0'71
		Morand I	142'64	1'24	...	143'88	83'39	32'83	57'22	20'20
		Morand II	657'66	22'35	...	680'01	20'21	7'20	46'90	107'...
		Mutbarra	1,392'14	35'81	...	1,427'95	4'21	...	...	68
		Sihar	442'74	54'47	...	497'21	...	9'03	1'28	...
		Retari	145'79	...	...	145'79	...	...	...	...
		Bardi	4,011'10	13'07	...	4,024'17	...	...	...	...
		Total	6,808'69	126'94	...	6,935'63	110'41	50'99	105'40	268
2	Dhaba	Kali II	...	...	...	...	...	...	...	...
		Morand I	...	...	...	...	...	...	...	...
		Morand II	57'48	0'50	...	57'98	...	...	...	...
		Mutbarra	1,023'77	13'02	...	1,036'79	...	...	0'34	62
		Sihar	7,353'86	261'21	...	7,615'07	2'88	6'12	14'80	978'
		Retari	13,737'66	131'14	...	13,868'80	...	...	13'11	187'
		Bardi	24,960'83	161'34	...	25,122'17	...	...	5'08	425'
		Total	47,133'60	567'21	...	47,700'81	2'88	6'12	33'33	1,654'
3	Nasirabad	Kali II	...	...	...	...	...	...	...	...
		Morand I	...	...	...	...	0'50	...	2'49	2'
		Morand II	271'61	12'81	...	284'42	4'22	0'55	2'71	2'
		Mutbarra	4,161'32	104'33	...	4,265'65	1'52	0'92	3'50	129'
		Sihar	6,671'90	315'15	...	6,987'05	1'26	3'29	3'41	1,013'
		Retari	14,508'07	196'01	...	14,704'08	10'68	2'00	1'99	158'4
		Bardi	25,653'59	106'76	...	25,760'35	0'06	0'55	12'99	597'6
		Total	51,266'49	735'06	...	52,001'55	18'24	7'31	27'09	1,903'6

According to Soils and Position, &c.—(Contd.)

AND.									Grand Total (i. e., total of columns 14, 18 and 31).
SUGARCANE, IRRIGATED.								Total.	
Three years' shift.	(Three years' shift) Geunra.	Four years' shift.	(Four years' shift) Geunra.	Five years' shift.	(Five years' shift) Geunra.	Six years' shift.	(Six years' shift) Geunra.		
23	24	25	26	27	28	29	30	31	32
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
AHSIL.—	(Contd.)								
5'03	...	...	...	...	...	...	...	5'03	6'33
516'56	91'78	...	...	...	...	...	...	613'58	2,493'23
1,926'92	183'62	...	...	...	...	...	...	2,304'18	17,097'75
654'67	146'03	...	...	...	...	...	...	982'72	12,447'83
65'71	10'34	...	...	...	...	...	...	148'26	2,739'27
187'61	32'61	...	...	...	...	...	...	293'95	1,001'64
...	...	...	...	...	...	...	...	4'18	149'97
1'00	1'09	...	...	...	...	...	...	6'33	4,032'50
3,357'50	465'47	...	...	...	...	...	...	4,358'23	39,966'52
...	...	...	...	...	...	...	...	...	35'08
12'50	...	...	...	...	...	...	...	12'50	773'64
148'54	18'18	...	...	...	...	...	...	166'72	5,481'49
13'07	5'20	...	...	...	...	...	...	81'36	2,200'03
403'80	70'46	...	...	...	...	...	...	1,476'90	10,348'35
23'94	2'00	...	...	...	...	...	...	226'99	14,095'79
2'65	...	...	...	...	...	...	...	430'91	25,553'08
602'50	95'84	...	...	...	...	...	...	2,395'38	58,487'46
...	...	...	...	...	...	...	...	...	4'50
126'93	3'30	...	...	...	...	...	...	135'22	
601'48	53'52	...	...	...	...	...	...	665'	
106'06	13'88	...	...	...	...	...	...		
327'37	68'95	...	...	...	...	...	...		
...	...	...	...	...	...	...	...		
...	...	...	...	...	...	...	...		
1,161'84	139'65	...	...	...	...	...	...		



सत्यमेव जयते

according to Soils and Position, &c.—(Contd.)

LAND.

Bandhia.	Bandhan.	Irrigable.	(Irrigable) Geunra.	Mamuli or ordinary.	Geunra.	Total.
8	9	10	11	12	13	14
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
TAHSIL.—(Contd.)						
...	...	..	...	89'61	...	197'78
...	...	...	...	414'14	17'81	1,505'72
...	...	...	...	456'28	29'11	1,678'25
...	...	...	...	10'53	1'20	54'73
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	970'56	48'12	3,436'48
...	...	...	...	...	...	10'34
...	...	...	...	6'05	...	8'67
...	...	...	...	869'34	12'34	1,108'60
...	...	...	...	5,357'43	135'94	7,256'18
8'86	...	...	...	4,550'78	132'84	8,762'49
...	...	...	...	5'00	...	26'01
...	...	...	...	...	...	...
...	...	...	...	...	...	...
8'86	...	...	...	10,788'60	281'12	17,172'29
...	...	...	...	...	...	...
...	...	...	...	19'00	...	19'50
...	...	...	...	365'39	1'00	404'39
...	...	...	...	193'13	22'86	230'18
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	577'52	23'86	654'07

TABLE II.—Area in Occupation classed

Serial No.	Groups.	Class of Soil.	INFERIOR CROP LAND.				GARDEN				
			Mutfarikat.	(Mutfarikat) Geunra.	(Mutfarikat) Irrigable.	Total.	VEGETABLES AND FRUITS.				
							Irrigated.	(Irrigated) Geunra.	Unirrigated.	(Unirrigated) Geunra.	
			15	16	17	18	19	20	21	22	
			Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	
4	Chandu	Morand I	...	...	...	...	...	...	...	...	
		Morand II	35'75	...	...	35'75	1'45	...	...	...	
		Mutbarra	1,159'44	16'76	...	1,176'20	3'00	1'00	...	65'03	
		Sihar	646'53	39'76	...	686'29	0'50	...	...	...	
		Retari	1,027'25	12'58	...	1,039'83	...	...	...	...	
		Bardi	9,597'55	62'26	...	9,659'81	...	...	...	...	
		Total	12,466'52	131'36	...	12,597'88	4'95	1'00	...	...	
	5	Tapti	Kachar	...	...	...	...	...	...	...	...
			Kali II	...	...	...	...	...	...	...	...
			Morand I	...	...	...	...	...	0'80	...	...
			Morand II	109'03	5'89	...	114'92	4'00	14'45	...	...
			Mutbarra	6,116'64	121'28	...	6,237'92	26'33	6'28	0'93	191'42
Sihar			63'47	...	...	63'47	...	...	...	...	
6	Betul-Khaloti.	Retari	27'86	...	...	27'86	...	...	...	...	
		Bardi	41,745'77	485'84	...	42,231'61	...	...	0'20	614'32	
		Total	48,062'77	613'01	...	48,675'78	30'33	21'53	1'13	805'64	
		Kachar	...	...	...	...	...	...	...	0'50	
		Morand I	55'44	...	...	55'44	...	...	...	...	
		Morand II	1,648'99	19'31	...	1,668'30	1'00	...	...	3'91	
7	Betul-Khaloti.	Mutbarra	7,253'23	123'04	...	7,376'27	11'87	7'80	1'14	127'23	
		Sihar	15'92	...	...	15'92	...	...	...	...	
		Retari	2'00	...	...	2'00	...	...	...	...	
		Bardi	6,951'48	816'42	...	7,767'90	...	...	1'01	...	
		Total	15,927'06	958'77	...	16,885'83	12'87	7'80	'15	214'97	

SUGARCANE, IRRIGATED.									Grand Total (i. e., total of columns 14, 18 and 31).
Three years' shift.	(Three years' shift) Geunra.	Four years' shift.	(Four years' shift) Geunra.	Five years' shift.	(Five years' shift) Geunra.	Six years' shift.	(Six years' shift) Geunra.	Total.	
23	24	25	26	27	28	29	30	31	32
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
TAHSIL. — (Contd.)									
...	...	...	...	...	...	...	...	...	197'78
...	...	...	...	...	...	...	...	1'45	1,542'92
19'78	...	...	...	...	...	...	...	88'81	2,943'26
...	...	...	...	...	...	...	...	34'75	775'77
6'52	...	...	...	...	...	...	...	64'88	1,104'71
...	...	...	...	...	...	...	...	230'02	9,939'83
26'30	...	...	...	...	...	...	...	469'91	16,504'27
...	...	...	...	...	...	...	...	...	10'34
5'48	...	...	...	...	...	...	...	5'48	14'15
165'20	3'73	...	...	...	...	...	...	169'73	1,278'33
455'53	67'16	...	...	...	...	...	...	541'14	7,912'24
548'14	51'09	...	...	...	...	...	...	824'29	15,824'70
6'00	...	...	...	...	...	...	...	6'00	95'48
...	...	...	...	...	...	...	...	...	27'86
38'98	9'62	...	...	...	...	...	...	662'92	42,894'53
1,219'33	131'60	...	...	...	...	...	...	2,209'56	68,057'63
...	...	...	...	...	...	...	...	0'50	0'50
...	...	...	...	...	...	...	...	...	74'94
...	...	...	...	...	...	...	...	4'91	2,077'60
...	...	...	...	...	...	...	...	148'04	7,754'49
...	...	...	...	...	...	...	...	...	15'92
...	...	...	...	...	...	...	...	...	2'00
...	...	...	...	...	...	...	...	89'34	7,857'24
...	...	...	...	...	...	...	...	242'79	17,782'69

TABLE II.—Area in Occupation class

Serial No.	Group.	Class of Soil.	WHEAT			
			Dol.	Tagar.	Bharkila.	Kohli.
1	2	3	4	5	6	7
			Acres.	Acres.	Acres.	Acres.
						BETUL
7	Bhensdehi	Kali II	...	...	...	...
		Morand I	21'00	21'44	35'07	1'00
		Morand II	16'38	270'57	99'74	74'63
		Mutbarra	343'71	37'85	142'17	26'80
		Sihar	...	...	...	...
		Retari	...	...	...	...
		Bardi	...	...	...	...
		Total	381'09	329'86	276'98	102'43
8	Atnar	Kachar	...	...	...	...
		Kali II	1'50	1'85	11'01	...
		Morand I	39'53	36'33	129'66	0'25
		Morand II	47'34	102'92	382'90	64'31
		Mutbarra	7'50	103'63	51'80	57'73
		Sihar	...	2'00	...	...
		Retari	...	...	...	...
		Bardi	...	...	...	...
		Total	95'87	246'73	575'37	122'29
9	Bhawargarh	Kachar	...	...	...	...
		Kali II	...	4'60	3'32	6'55
		Morand I	...	47'85	18'73	22'69
		Morand II	5'69	193'90	37'57	161'59
		Mutbarra	...	69'80	28'61	75'19
		Sihar	1'50	27'52	20'38	76'20
		Retari	...	...	...	...
		Bardi	...	...	...	...
		Total	7'19	343'67	108'61	342'22

according to Soils and Position, &c.—(Contd.)

LAND.

Bandhia.	Bandhan.	Irrigable.	(Irrigable) Geunra.	Mamuli or ordinary.	Geunra.	Total.
8	9	10	11	12	13	14
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
TAHSIL.—(Contd.)						
...	...	...	...	26'03	...	26'03
...	...	11'50	...	1,538'10	...	1,628'11
2'00	...	56'03	...	3,823'84	14'23	4,357'42
...	...	...	...	1,890'70	34'25	2,475'48
...	...	...	...	2'00	...	2'00
...	...	...	...	...	...	...
...	...	...	...	...	...	...
2'00	...	67'53	...	7,280'67	48'48	8,489'04
...	...	...	...	1'00	...	1'00
...	...	15'56	...	228'31	...	258'23
...	...	95'90	10'0	2,904'03	28'31	3,235'01
4'00	...	159'39	4'74	9,020'99	152'53	9,939'12
8'00	...	33'94	1'60	2,795'86	48'37	3,108'43
...	...	...	...	5'10	...	7'10
...	...	...	...	...	...	...
...	...	...	...	...	...	...
12'00	...	304'79	7'34	14,955'29	229'21	16,548'89
...	...	...	...	0'09	...	0'09
...	...	...	...	94'58	...	109'05
...	...	...	...	300'07	1'00	390'34
2'31	...	...	...	1,448'56	7'92	1,857'54
...	...	...	...	163'00	8'19	344'79
...	...	...	...	290'59	9'05	425'24
...	...	...	...	...	...	...
...	...	...	...	...	...	...
2'31	...	...	...	2,296'89	26'16	3,127'05

TABLE II.—Area in Occupation classed

Serial No.	Group.	Class of Soil.	INFERIOR CROP LAND.				GARDEN			
			Mutfarikat.	(Mutfarikat) Geunra.	(Mutfarikat) Irrigable.	Total.	VEGETABLES AND FRUITS.			
							Irrigated.	(Irrigated) Geunra.	Unirrigated	(Unirrigated) Geunra.
			15	16	17	18	19	20	21	22
			Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
										BETUL
7	Bhensdehi	Kali II	...	...	...	...	...	...	...	...
		Morand I	3'35	...	...	3'35	...	...	...	0'20
		Morand II	344'55	0'90	...	345'45	7'00	...	3'00	4'50
		Mutbarra	6,576'69	49'77	...	6,626'46	1'30	...	2'94	203'05
		Sihar	12'21	...	...	12'21	...	...	...	0'81
		Retari	7'70	...	...	7'70	...	...	...	11'91
		Bardi	23,813'37	100'74	...	23,914'11	...	...	0'10	246'81
		Total	30,757'87	151'41	...	30,909'28	8'30	...	6'04	467'28
8	Atner	Kachar	...	...	...	...	...	...	...	...
		Kali II	1'00	...	...	1'00	...	...	0'06	0'33
		Morand I	4'56	...	...	4'56	53'64	3'00	4'15	1'87
		Morand II	1,431'52	20'66	...	1,452'18	19'74	3'07	1'37	25'53
		Mutbarra	19,058'27	190'34	...	19,248'61	7'58	21'15	12'57	382'68
		Sihar	31'85	...	...	31'85	...	...	0'27	...
		Retari	28'60	...	...	28'60	...	...	...	...
		Bardi	35,542'80	212'78	...	35,755'58	...	...	1'97	187'72
		Total	56,098'60	423'78	...	56,522'38	80'96	27'22	20'39	598'13
9	Bhawargarh	Kachar	...	...	...	...	...	...	...	...
		Kali II	...	...	...	...	...	...	...	...
		Morand I	0'75	...	...	0'75	...	...	...	...
		Morand II	67'97	...	...	67'97	...	...	...	3'31
		Mutbarra	701'81	2'26	...	704'07	...	...	1'29	56'41
		Sihar	3,511'96	116'67	...	3,628'63	...	...	2'87	655'54
		Retari	5,122'09	90'77	...	5,212'86	...	...	...	240'64
		Bardi	5,416'53	23'26	...	5,438'79	...	...	8'46	313'80
		Total	14,821'11	231'96	...	15,053'07	...	...	12'62	1,269'70

according to Soils and Position, &c.—(Contd.)

LAND.

SUGARCANE, IRRIGATED.									Grand total (i. e., total of Columns 14, 18 and 31).
Three years' shift.	(Three years' shift) Geunra.	Four years' shift.	(Four years' shift) Geunra.	Five years' shift.	(Five years' shift) Geunra.	Six years' shift.	(Six years' shift) Geunra.	Total.	
23	24	25	26	27	28	29	30	31	32
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
TAHSIL.—(Contd.)									
...	...	...	...	...	...	...	...	...	26'03
512'12	3'00	...	...	...	...	...	...	515'32	2,146'78
249'21	3'52	30'75	...	28'81	...	3'00	12'91	342'70	5,045'57
57'70	...	3'00	...	6'00	...	5'00	4'00	282'99	9,384'93
5'60	...	...	...	...	...	...	...	6'41	20'62
...	...	...	...	...	...	...	...	11'91	19'61
...	...	...	...	...	...	...	...	246'91	24,161'02
824'63	6'52	33'75	...	34'81	...	8'00	16'91	1,406'24	40,804'56
...	...	...	...	...	...	...	...	...	1'00
86'39	2'61	...	...	...	...	...	...	89'39	348'62
412'62	25'74	...	...	...	...	...	...	501'02	3,740'59
423'57	87'41	...	...	...	...	...	...	560'69	11,951'99
78'18	13'25	...	...	...	...	...	...	515'41	22,872'45
...	...	...	...	...	...	...	...	0'27	39'22
...	...	...	...	...	...	...	...	...	28'60
0'35	0'40	...	...	...	...	...	...	190'44	35,946'02
1,001'11	129'41	...	...	...	...	...	...	1,857'22	74,928'49
...	...	...	...	...	...	...	...	...	0'09
...	...	...	...	...	...	...	...	...	109'05
...	...	...	...	...	...	...	...	...	391'09
...	...	...	...	...	...	...	...	3'31	1,928'82
...	...	...	...	...	...	...	...	57'70	1,106'56
6'25	...	...	...	...	...	...	...	664'66	4,718'53
...	...	...	...	...	...	...	...	240'64	5,453'50
...	...	...	...	...	...	...	...	322'26	3,761'05
6'25	...	...	...	...	...	...	...	1,288'57	19,468'69

TABLE II.—Area in Occupation classed

Serial No.	Group.	Class of Soil.	WHEAT				
			Dol.	Tagar.	Bharkila.	Kohli.	
1	2	3	4	5	6	7	
			Acres.	Acres.	Acres.	Acres.	
						BETUL	
10	Khamapur	Kali II	...	...	...	...	
		Morand I	...	38 65	30 83	101 63	
		Morand II	...	1 00	416 99	88 72	634 58
		Mutbarra	...	1 50	41 64	11 81	53 98
		Sihar	...	...	...	...	4 77
		Retari	...	...	...	...	...
		Bardi	...	...	...	...	...
		Total	...	2 50	497 29	131 36	794 96
11	Chachundra	Kali II	...	...	2 31	...	
		Morand I	...	4 50	8 05	86 15	1 00
		Morand II	...	7 00	157 81	237 59	78 01
		Mutbarra	...	...	103 61	68 94	88 12
		Sihar	...	...	11 75	3 64	9 87
		Retari	...	...	...	...	...
		Bardi	...	...	...	...	...
		Total	...	11 50	281 22	398 63	177 00
12	Tawa Valley	Kachar	...	...	...	...	
		Morand I	...	5 00	1 40	6 99	11 72
		Morand II	...	12 34	116 79	35 56	197 19
		Mutbarra	...	0 25	26 54	0 50	10 28
		Sihar	...	4 81	29 58	2 38	22 67
		Sihar I	...	...	...	...	...
		Sihar II	...	...	...	...	...
		Retari	...	...	...	...	...
		Bardi	...	...	...	...	...
		Total	...	22 40	174 31	45 43	241 86
TOTAL FOR BETUL TAHSIL			...	726 72	20,468 57	7,399 30	6,823 23

according to Soils and Position, &c.—(Contd.)

LAND.

Bandhia.	Bandhan.	Irrigable.	(Irrigable) Geunra.	Mamuli or ordinary.	Geunra.	Total.
8	9	10	11	12	13	14
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
TAHSIL.—(Contd.)						
...	...	...	...	122'79	...	122'79
3'00	...	...	...	1,849'83	...	2,023'95
11'79	...	4'00	...	4,626'53	6'16	5,789'77
0'50	...	...	...	288'20	2'35	399'98
...	...	...	...	50'69	2'00	57'46
...	...	...	...	...	...	...
...	...	...	...	...	...	...
15'29	...	4'00	...	6,938'04	10'51	8,393'95
...	...	...	...	306'21	...	308'52
...	...	2'00	...	2,203'45	17'64	2,322'79
1'50	...	5'70	...	5,091'80	69'86	5,649'27
1'51	...	1'00	...	1,368'08	27'05	1,659'31
0'22	...	...	...	190'02	29'64	245'14
...	...	...	...	...	...	...
...	...	...	...	...	...	...
3'23	...	8'70	1'00	9,159'56	144'19	10,185'03
...	...	...	...	2'12	...	2'12
5'00	...	...	...	1,597'88	7'00	1,634'99
3'00	...	...	...	4,794'79	68'02	5,227'69
...	...	...	...	115'36	6'25	159'18
...	...	...	...	790'17	46'04	895'65
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
8'00	...	...	...	7,300'32	127'31	7,919'63
51'69	8'00	385'02	8'34	95,813'23	996'38	133,680'48

TABLE II.—Area in Occupation classed

Serial No.	Group.	Class of Soil.	INFERIOR CROP LAND.				GARDEN			
			Mutfarikat.	(Mutfarikat) Geunra.	(Mutfarikat) Irrigable.	Total.	VEGETABLES AND FRUITS.			
							Irrigable.	(Irrigable) Geunra.	Unirrigable.	(Unirrigable) Geunra.
			15	16	17	18	19	20	21	22
			Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
										BETUL
10	Khamapur ...	Kali II ...	...	...	...	...	...	...	...	...
		Morand I ...	14'66	...	...	14'66	...	...	...	1'33
		Morand II ...	1,377'50	5'24	...	1,382'74	...	...	...	8'93
		Mutbarra ...	5,050'61	50'14	...	5,100'75	1'32	0'70	4'39	514'54
		Sihar ...	1,085'99	4'68	...	1,090'67	...	...	1'36	117'00
		Retari ...	2,670'05	14'64	...	2,684'69	...	...	3'73	128'00
		Bardi ...	13,886'90	53'91	...	13,940'81	...	...	7'46	432'64
		Total ...	24,085'71	128'61	...	24,214'32	1'32	0'70	16'94	1,202'44
11	Chachundra...	Kali I ...	...	...	...	...	...	...	0'10	...
		Morand I ...	0'10	...	...	0'10	3'00	...	1'70	...
		Morand II ...	172'86	...	...	172'86	0'40	...	7'08	13'11
		Mutbarra ...	2,050'45	28'90	...	2,079'35	...	...	0'05	98'69
		Sihar ...	1,130'32	38'38	...	1,168'70	2'50	...	0'71	159'31
		Retari ...	2,323'70	9'86	...	2,333'56	0'50	...	...	21'75
		Bardi ...	10,254'39	102'46	...	10,356'85	...	...	1'06	136'48
		Total ...	15,931'82	179'60	...	16,111'42	6'40	...	10'70	429'34
12	Tawa Valley.	Kachar ...	...	...	...	...	...	...	...	...
		Morand I ...	...	...	...	...	...	...	...	0'28
		Morand II ...	1,133'85	16'59	...	1,150'44	...	...	6'32	76'81
		Mutbarra ...	812'23	21'11	...	833'34	...	...	0'28	52'36
		Sihar ...	...	...	...	...	4'47	...	16'47	1,160'50
		Sihar I ...	4,248'84	215'04	...	4,463'88	...	...	...	...
		Sihar II ...	6,807'25	71'61	...	6,878'86	...	...	...	...
		Retari ...	6,242'50	48'33	...	6,290'83	...	...	3'58	92'44
		Bardi ...	2,470'95	24'67	...	2,495'62	...	...	...	59'46
		Total ...	21,715'62	397'35	...	22,112'97	4'47	...	26'65	1,441'85
TOTAL FOR BETUL TAHSIL			345,075'86	4,645'06	...	349,720'92	281'13	122'67	262'44	10,698'86

according to Soils and Position, &c.—(Contd.)

LAND.									Grand total (i. e., total of Columns 14, 1 and 31).
SUGARCANE IRRIGATED.								Total.	
Three years' shift.	(Three years' shift) Geunra.	Four years' shift.	(Four years' shift) Geunra.	Five years' shift.	(Five years' shift) Geunra.	Six years' shift.	(Six years' shift) Geunra.		
23	24	25	26	27	28	29	30	31	32
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
TAHSIL.—(Concl'd.)									
1'00	...	...	...	...	...	...	...	1'00	123'79
27'95	...	...	...	...	...	...	...	29'28	2,067'89
99'25	7'78	...	...	...	...	...	...	115'96	7,288'47
9'21	...	...	...	...	...	...	...	530'16	6,030'89
4'85	...	...	...	...	...	...	...	123'21	1,271'34
...	1'00	...	...	...	...	...	...	132'73	2,817'42
...	...	...	...	...	...	...	...	440'10	14,380'91
142'26	8'78	...	...	...	...	...	...	1,372'44	33,980'71
87'99	...	9'60	...	...	...	16'90	...	114'59	423'11
432'65	3'50	39'26	...	3'65	...	19'74	...	503'50	2,826'39
401'53	11'26	28'23	...	...	...	9'00	...	470'61	6,292'74
79'85	8'86	3'76	14'50	...	...	...	...	205'71	3,944'37
192'17	25'07	...	...	...	...	...	...	379'76	1,793'60
16'49	...	...	...	...	...	...	...	38'74	2,372'30
2'57	0'96	...	...	...	...	...	...	141'07	10,497'92
1,213'25	49'65	80'85	14'50	3'65	...	45'64	...	1,853'98	28,150'43
...	...	...	...	...	...	...	...	...	2'12
28'42	...	3'00	...	2'00	...	...	...	33'70	1,668'69
40'98	6'69	3'00	1'95	7'00	...	...	...	142'75	6,520'88
4'73	0'42	...	1'50	...	...	...	...	59'29	1,051'81
57'67	4'92	1'50	3'75	...	...	...	...	1,249'28	2,144'93
...	...	...	...	...	...	...	...	...	4,463'88
...	...	...	...	...	...	...	...	...	6,878'86
...	...	...	...	...	...	...	...	96'02	6,386'85
...	...	...	...	...	...	...	...	59'46	2,555'08
131'80	12'03	7'50	7'20	9'00	...	...	...	1,640'50	31,673'10
686'77	1,038'95	122'10	21'70	47'46	...	53'64	16'91	22,352'63	505,754'03

TABLE II.—Area in Occupation classed

Serial No.	Group.	Class of Soil.	WHEAT			
			Dol.	Tagar.	Bharkila.	Kohli.
1	2	3	4	5	6	7
			Acres.	Acres.	Acres.	Acres.
						MULTAI
13	Multai-Khaloti	Kachar	...	...	...	...
		Morand I	...	...	0'50	...
		Morand II	10'00	123'56	22'18	16'60
		Mutbarra	2'00	135'79	11'94	32'90
		Sihar	...	...	...	...
		Retari	...	...	...	...
		Bardi	...	...	...	...
		Total	12'00	259'35	34'62	49'50
14	Masod-Pattan	Kachar	...	...	...	...
		Kali II	32'13	12'29	30'57	...
		Morand I	209'51	906'19	986'15	...
		Morand II	125'55	2,751'07	1,398'19	49'49
		Mutbarra	48'09	889'85	266'71	115'73
		Sihar	...	...	...	...
		Retari	...	...	...	...
		Bardi	...	...	...	...
		Total	415'28	4,559'40	2,681'62	165'22
15	Jawalkhera	Kachar	...	...	...	...
		Kali II	10'95	0'45	12'80	...
		Morand I	396'74	37'56	152'78	...
		Morand II	141'59	305'19	400'56	17'56
		Mutbarra	13'72	95'67	39'19	1'50
		Sihar	...	...	0'30	...
		Retari	...	...	...	...
		Bardi	...	...	...	...
		Total	563'00	438'87	605'63	19'06

according to Soils and Position, &c.—(Contd.)

LAND.

Bandhia.	Bandhan.	Irrigable.	(Irrigable) Geunra.	Mamuli or ordinary.	Geunra.	Total.
8	9	10	11	12	13	14
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
TAHSIL.						
...	...	...	...	2'52	...	2'52
...	...	...	0'50	24'65	4'50	30'15
...	...	21'87	...	891'68	7'82	1,093'71
...	...	...	...	636'78	7'00	826'41
3'00	...	...	...	...	...	3'00
...	...	...	...	...	...	...
...	...	...	...	...	...	...
3'00	...	21'87	0'50	1,555'63	19'32	1,955'79
...	...	...	...	3'63	...	3'63
...	...	4'75	...	674'94	1'25	755'93
6'50	...	75'90	1'29	11,023'16	106'53	13,315'23
12'00	...	111'46	0'50	15,148'45	124'50	19,721'21
1'00	...	41'33	...	3,790'13	43'44	5,196'28
...	...	...	...	2'10	...	2'10
...	...	...	...	...	...	...
...	...	...	...	...	...	...
19'50	...	233'44	1'79	30,642'41	275'72	38,994'38
...	...	...	...	1'00	...	1'00
2'00	...	38'07	3'02	664'24	...	731'53
8'26	4'12	158'59	4'60	7,597'02	44'38	8,404'05
5'02	7'00	213'58	17'04	16,224'82	86'76	17,419'12
0'30	...	64'40	2'72	3,492'55	18'44	3,728'49
...	...	0'40	...	24'66	2'00	27'36
...	...	...	...	...	...	...
...	...	...	...	...	...	...
15'58	11'12	475'04	27'38	28,004'29	151'58	30,311'55

Serial No.	Group.	Class of Soil.	INFERIOR CROP LAND.				GARDEN					
			Mutfarikat.	(Mutfarikat) Geunra.	(Mutfarikat) Irrigable.	Total.	VEGETABLES AND FRUITS.					
							Irrigated.	(Irrigated) Geunra.	Unirrigated.	(Unirrigated) Geunra.		
			15	16	17	18	19	20	21	22		
			Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.		
13	Multai-Khaloti.	Kachar	...	...	...	...	...	...	...	MULTAI		
		Morand I	2'00	...	...	2'00	...	...	...	...		
		Morand II	410'19	...	11'42	421'61	...	...	...	1'64		
		Mutbarra	3,854'40	39'74	4'00	3,898'14	0'50	...	...	90'98		
		Sihar	20'86	...	...	20'86	...	...	...	...		
		Retari	22'11	...	...	22'11	...	...	...	...		
		Bardi	16,763'98	40'74	0'25	16,804'97	...	...	...	172'23		
		Total	21,073'54	80'48	15'67	21,169'69	0'50	...	...	264'85		
		14	Masod-Pattan.	Kachar	...	...	...	...	...	...	...	...
				Kali II	...	...	...	...	...	...	1'89	...
Marand I	15'19			...	...	15'19	15'84	...	7'95	0'96		
Morand II	1,159'20			12'36	...	1,171'56	44'22	7'81	10'69	30'09		
Mutbarra	9,459'75			88'35	...	9,548'10	28'50	7'58	13'96	154'69		
Sihar	14'77			0'50	...	15'27	...	...	...	...		
Retari	2'83			...	...	2'83	...	...	0'08	...		
Bardi	18,463'06			26'38	...	18,489'44	4'45	1'00	6'40	75'01		
Total	29,114'80			127'59	...	29,242'39	93'01	16'39	40'97	260'75		
15	Jawalkhera ...			Kachar	...	...	...	...	...	...	...	...
		Kali II	...	...	...	...	...	...	...	1'84		
		Morand I	38'80	...	...	38'80	6'30	2'62	1'42	0'82		
		Morand II	2,301'17	0'80	...	2,301'97	14'11	12'24	1'00	46'56		
		Mutbarra	15,290'15	94'09	...	15,294'24	25'04	8'48	9'07	226'40		
		Sihar	166'69	0'60	...	167'29	...	...	...	...		
		Retari	48'26	...	...	48'26	...	...	...	1'51		
		Bardi	17,084'06	51'82	...	17,135'88	2'42	...	0'55	135'94		
		Total	34,839'13	147'31	...	34,986'44	47'87	23'34	12'04	413'07		

according to Soils and Position, &c.—(Contd.)

LAND.									Grand total (i. e., total of Columns 14, 18 and 31).
SUGARCANE, IRRIGATED.									
Three years' shift.	(Three years' shift) Geunra.	Four years' shift.	(Four years' shift) Geunra.	Five years' shift.	(Five years' shift) Geunra.	Six years' shift.	(Six years' shift) Geunra.	Total.	
23	24	25	26	27	28	29	30	31	32
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
TAHSIL.—(Contd.)									
...	...	...	...	...	...	...	...	...	2'52
...	...	...	...	...	...	...	...	...	32'15
2'00	...	...	...	...	...	...	...	3'64	1,518'96
...	...	...	...	...	...	...	...	91'48	4,816'03
...	...	...	...	...	...	...	...	...	23'86
...	...	...	...	...	...	...	...	...	22'11
...	...	...	...	...	...	...	...	172'23	16,977'20
2'00	...	...	...	...	...	...	...	267'35	23,392'83
...	...	...	...	...	...	...	...	...	3'63
297'21	...	...	...	...	...	...	...	299'10	1,055'03
1,550'84	125'36	...	...	...	...	...	...	1,700'95	15,031'37
1,258'52	148'85	...	...	...	...	...	...	1,500'18	22,392'95
382'80	42'07	...	...	...	...	...	...	629'60	15,373'98
...	...	...	...	...	...	...	...	...	17'37
...	...	...	...	...	...	...	...	0'08	2'91
30'70	5'37	...	...	...	...	...	...	122'93	18,612'37
3,520'07	321'65	...	...	...	...	...	...	4,252'84	72,489'61
...	...	...	...	...	...	...	...	...	1'00
120'89	4'99	125'13	12'17	11'60	...	34'52	...	311'14	1,042'67
507'26	64'22	420'08	51'77	103'76	6'54	117'65	13'80	1,296'24	9,739'09
828'05	78'00	555'48	69'29	134'70	9'55	149'04	4'19	1,902'21	21,623'30
409'36	23'05	249'52	25'09	55'83	...	69'06	0'36	1,101'26	20,123'99
0'40	...	...	...	1'57	...	...	...	1'97	196'62
...	...	...	...	...	...	...	...	1'51	49'77
6'53	...	4'06	0'60	1'70	...	4'50	...	156'30	17,292'18
1,872'49	170'26	1,354'27	158'92	309'16	16'09	374'77	18'35	4,770'63	70,068'62

TABLE II.—Area in Occupation classed

Serial No.	Group.	Class of Soil.	WHEAT			
			Dol.	Tagar.	Bharkila.	Kholi.
1	2	3	4	5	6	7
			Acres.	Acres.	Acres.	Acres.
			MULTAI			
16	Dahawa-Dunawa	Kali II	102'09	1'16	9'08	...
		Morand I	283'06	27'19	114'38	...
		Morand II	230'42	661'05	363'18	22'15
		Mutbarra	20'02	448'70	59'24	39'77
		Sihar	2'80	86'61	1'63	...
		Retari	...	...	...	...
		Bardi	...	...	...	...
		Total	638'39	1,224'71	547'51	61'92
17	Tawa Valley	Kali II	...	...	...	...
		Morand I	0'62	8'63	3'88	...
		Morand II	4'07	32'96	15'22	122'12
		Mutbarra	...	9'23	0'43	2'85
		Sihar I	25'37	3'15	1'50	47'01
		Sihar II	...	...	...	...
		Retari	...	...	...	...
		Bardi	...	...	...	...
		Total	30'06	53'97	21'03	171'98
18	Aonria-Bordehi	Kali II	...	...	...	...
		Morand I	25'73	48'81	16'57	...
		Morand II	39'22	530'87	76'97	1'00
		Mutbarra	0'85	70'76	0'90	...
		Sihar	98'62	140'02	16'16	7'40
		Retari	...	...	...	...
		Bardi	...	...	...	...
		Total	164'42	790'46	110'60	8'40

according to Soils and Position, &c.—(Contd.)

LAND.

Bandhia.	Bandhan.	Irrigable.	(Irrigable) Geunra.	Mamuli or ordinary.	Geunra.	Total.
8	9	10	11	12	13	14
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
TAHSIL.—(Contd).						
...	2'00	11'98	...	415'24	10'05	551'60
6'86	17'55	181'64	3'07	4,129'74	29'63	4,793'12
29'49	39'57	355'24	21'67	14,873'63	84'61	16,681'01
3'00	4'46	148'53	11'24	6,149'51	44'76	6,929'23
...	1'50	14'71	1'30	324'34	22'04	454'93
...	...	...	...	...	...	...
...	...	...	...	...	...	...
39'35	65'08	712'10	37'28	25,892'46	191'09	29,409'89
...	...	...	...	18'33	...	18'33
...	...	...	...	780'77	...	793'90
...	...	...	...	1,301'02	4'45	1,479'84
...	...	...	...	15'59	0'10	28'20
...	...	...	...	437'55	33'35	547'93
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	...	...	...	2,553'26	37'90	2,868'20
...	...	...	...	39'80	...	39'80
...	...	2'75	...	1,097'57	1'34	1,192'77
...	4'48	5'21	...	4,176'89	11'80	4,846'44
...	...	...	...	95'81	...	168'32
...	0'32	16'85	...	2,409'45	97'11	2,785'93
...	...	...	...	...	...	...
...	...	...	...	...	...	...
...	4'80	24'81	...	7,819'52	110'25	9,033'26

TABLE II.—Area in Occupation classed

Serial No.	Group.	Class of Soil.	INFERIOR CROP LAND.				GARDEN			
			Mutfarikat.	(Mutfarikat) Geunra.	(Mutfarikat) Irrigable.	Total.	VEGETABLES AND FRUITS.			
							Irrigated.	(Irrigated) Geunra.	Unirrigated	(Unirrigated) Geunra.
			15	16	17	18	19	20	21	22
			Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
										MULTAI
16	D a h a w a - Dunawa.	Kali II	...	...	...	...	0'40	...	...	...
		Morand I	40'52	...	...	40'52	6'44	...	0'69	...
		Morand II	748'03	13'41	...	761'44	18'03	2'32	0'91	13'49
		Mutbarra	13,562'29	118'43	...	13,680'72	30'40	12'87	9'08	503'76
		Sihar	1,098'14	23'80	...	1,121'94	1'10	3'70	2'24	97'40
		Retari	1,185'87	1'20	...	1,187'07	...	...	...	12'62
		Bardi	37,668'40	161'38	...	37,829'78	8'94	0'50	4'83	178'49
		Total	54,303'25	318'22	...	54,621'47	65'31	19'39	17'75	805'76
17	Tawa Valley	Kali II	...	...	...	...	...	...	...	...
		Morand I	10'60	...	...	10'60	...	...	...	...
		Morand II	247'65	1'34	...	248'99	...	...	...	...
		Mutbarra	36'04	0'90	...	36'94	...	...	...	1'94
		Sihar I	1,457'90	110'00	...	1,567'90	...	...	26'67	482'81
		Sihar II	4,363'89	35'43	...	4,399'32	...	...	...	...
		Retari	893'40	4'75	...	898'15	...	...	...	...
		Bardi	84'95	9'95	...	94'90	...	...	14'27	...
		Total	7,094'43	162'37	...	7,256'80	...	...	40'94	484'75
18	Aonria-B o r - dehi.	Kali II	...	...	...	...	...	...	...	...
		Morand I	...	...	...	...	...	...	...	...
		Morand II	101'37	...	...	101'37	...	...	0'50	0'94
		Mutbarra	304'72	2'78	...	307'50	...	...	...	26'30
		Sihar	10,630'51	360'64	...	10,991'15	9'03	1'02	8'67	1,824'35
		Retari	17,388'41	85'53	...	17,473'94	0'85	...	2'72	92'17
		Bardi	4,430'66	16'65	...	4,447'31	...	...	0'74	70'26
		Total	32,855'67	465'60	...	33,321'27	9'88	1'02	12'63	2,014'08

according to Soils and Position, &c.—(Contd.)

LAND.									Grand Total (i. e., total of Columns 14, 18 and 31).
SUGARCANE, IRRIGATED.								Total.	
Three years' shift.	(Three years' shift) Geunra.	Four years' shift.	(Four years' shift) Geunra.	Five years' shift.	(Five years' shift) Geunra.	Six years' shift.	(Six years' shift) Geunra.		
23	24	25	26	27	28	29	30	31	32
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
TAHSIL.—(Contd.)									
138'04	12'98	143'86	11'53	25'62	...	7'78	...	340'21	891'81
883'72	41'94	480'87	19'59	106'39	...	73'86	2'00	1,615'50	6,449'14
1,610'20	99'87	611'48	20'99	156'02	1'38	82'08	3'09	2,619'86	20,062'31
665'18	53'34	274'79	12'42	35'65	7'34	33'40	2'00	1,640'23	22,250'18
172'79	15'41	8'49	3'00	5'51	...	...	...	309'64	1,886'51
2'50	...	...	...	...	...	...	...	15'12	1,202'19
25'05	...	8'98	...	0'20	...	4'86	...	231'85	38,061'63
3,497'48	223'54	1,528'47	67'53	329'39	8'72	201'98	7'09	6,772'41	90,803'77
...	...	...	...	...	...	...	...	...	18'33
...	...	...	...	...	...	...	...	...	804'50
...	...	...	...	...	...	...	...	...	1,728'83
...	...	...	...	...	...	...	...	1'94	67'08
14'41	...	...	...	...	...	...	...	523'89	2,639'72
...	...	...	...	...	...	...	...	...	4,399'32
...	...	...	...	...	...	...	...	...	898'15
...	...	...	...	...	...	...	...	14'27	109'17
14'41	...	...	...	...	...	...	...	540'10	10,665'10
9'00	...	...	...	...	...	...	...	9'00	48'80
64'89	...	7'00	...	...	...	1'00	...	72'89	1,265'66
111'17	2'72	23'90	0'80	12'00	...	2'00	...	154'03	5,101'84
9'71	...	...	...	...	...	...	...	36'01	511'83
2,100'74	166'98	121'68	21'92	9'39	...	15'94	...	4,279'72	18,056'80
44'35	7'94	8'48	...	...	...	...	...	156'51	17,630'45
...	...	...	...	...	...	...	...	71'00	4,518'31
2,339'86	177'64	161'06	22'72	21'39	...	18'94	...	4,779'16	47,133'69

TABLE II.—Area in Occupation classed

Serial No.	Group.	Class of Soil.	WHEAT				
			Dol.	Tagar.	Bharkila.	Kohli.	
1	2	3	4	5	6	7	
			Acres.	Acres.	Acres.	Acres.	
19	Chichanda	Kali II	...	...	...	...	
		Morand I	...	3'48	...	2'90	...
		Morand II	...	17'65	33'45	32'08	28'11
		Mutbarra	...	2'00	43'63	14'27	38'75
		Sihar	...	...	1'60	...	4'50
		Retari	...	...	...	...	...
		Bardi	...	...	...	...	...
		Total	...	23'13	78'68	49'25	71'36
TOTAL FOR MULTAI TAHSIL		...	1,846'28	7,405'44	4,050'26	547'44	
TOTAL FOR BETUL DISTRICT		...	2,573'00	2,7874'01	11,449'56	7,370'67	

according to Soils and Position, &c.—(Concl'd.)

LAND.

Bandhia.	Bandhan.	Irrigable.	(Irrigable) Geunra.	Mamuli or ordinary.	Geunra.	Total.
8	9	10	11	12	13	14
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
...	...	...	...	7'63	...	7'63
...	...	6'15	...	327'99	1'00	341'52
2'00	1'32	23'48	3'80	2,470'72	11'11	2,623'72
...	...	22'00	...	1,699'30	13'06	1,833'01
...	...	...	...	20'62	2'25	28'97
...	...	...	...	...	...	...
...	...	...	...	...	...	...
2'00	1'32	51'63	3'80	4,526'26	27'42	4,834'85
79'43	82'32	1,518'89	70'75	100,993'83	813'28	117,407'92
131'12	90'32	1,903'91	79'09	196,807'06	2,809'66	251,088'40

TABLE II.—Area in Occupation classed

Serial No.	Group.	Class of Soil.	INFERIOR CROP LAND				GARDEN			
			Mutfarikat.	(Mutfarikat) Geunra.	(Mutfarikat) Irrigable.	Total.	VEGETABLES AND FRUITS.			
			15	16	17	18	Irrigated.	(Irrigated) Geunra.	Unirrigated.	(Unirrigated) Geunra.
			15	16	17	18	19	20	21	22
			Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Chichanda...	Kali III	...	...	...	...	...	...	...	...	...
	Morand I	...	1'20	...	...	1'20	...	...	...	...
	Morand II	...	160'20	2'20	...	162'40	...	...	...	1'19
	Mutbarra	...	3,077'95	29'79	...	3,107'74	3'42	2'48	4'95	327'09
	Sihar	...	264'48	46'81	...	311'29	...	0'92	...	97'68
	Retari	...	281'20	3'06	...	284'26	...	...	...	5'62
	Bardi	...	25,264'88	36'70	...	25,301'58	...	...	9'12	153'83
	Total	...	29,049'91	118'56	...	29,168'47	3'42	3'40	14'07	585'41
	TOTAL FOR MUL-TAI TAHSIL.	...	208,330'73	1,420'13	15'67	209,766'53	219'99	63'54	138'40	4,828'61
	TOTAL FOR BETUL DISTRICT.	...	553,406'59	6,065'19	15'67	559,487'45	501'12	186'21	400'84	15,527'47

according to Soils and Position, &c.—(Concl'd).

LAND.									Grand total (i. e., total of Columns 14, 18 and 31).
SUGARCANE, IRRIGATED.								Total.	
Three years' shift.	(Three years' shift) Geunra.	Four years' shift.	(Four years' shift) Geunra.	(Five years' shift.)	(Five years' shift.) Geunra.	(Six years' shift.)	(Six years' shift) Geunra.		
23	24	25	26	27	28	29	30	31	32
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
4'20	...	4'20	...	...	...	...	...	8'40	16'03
23'66	0'48	53'25	...	36'51	...	...	...	113'90	456'62
130'55	10'09	81'40	2'50	22'66	...	12'81	...	261'20	3,047'32
87'07	7'28	32'34	2'50	10'62	...	4'32	...	482'07	5,422'82
10'87	1'50	...	...	...	...	...	...	110'97	451'23
...	...	...	...	...	...	...	...	5'62	289'88
1'00	1'00	...	...	...	...	...	...	164'95	25,466'53.
257'35	20'35	171'19	5'00	69'79	...	17'13	...	1,147'11	35,150'43
11,503'66	913'44	3,214'99	254'17	729'73	24'81	612'82	25'44	22,529'60	349,704'05
21,190'43	1,952'39	3,337'09	275'87	777'19	24'81	666'46	42'35	44,882'23	855,458'08

TABLE III.—Cropped area

Assessment Group.	AT PRESENT							
	Wheat.	Weat-Gram (Birra).	Gram.	Rice.	Masur.	Tiwra.	Kodon and Kutki.	Sugarcane.
1	2	3	4	5	6	7	8	9
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
BETUL								
1. Betul ...	19,165'66	2,955'18	667'89	...	1,351'21	3,737'82	1,820'69	874'89
2. Dhaba ...	5,372'74	1,537'93	3,832'18	...	284'30	629'77	15,667'26	182'86
3. Narsirabad ...	11,654'56	2,873'91	4,294'55	...	1,107'23	1,652'98	17,078'71	349'85
4. Chandu ...	1,406'53	377'24	678'03	...	375'70	218'74	4,157'53	6'91
5. Tapti ...	8,253'22	2,323'11	1,750'14	...	2,352'64	1,003'38	9,049'36	348'59
6. Betul-Khaloti ...	102'44	81'09	176'71	20'73	3'80	0'25	1,228'80	...
7. Bhensdehi ...	3,778'41	1,025'28	1,014'28	315'84	1,259'40	882'01	5,317'81	141'08
8. Atner ...	8,901'16	2,232'04	1,327'95	...	1,494'51	838'91	5,656'20	208'56
9. Bhawargarh ...	974'21	384'89	1,103'79	349'70	16'08	0'45	5,308'66	...
10. Khamapur ...	2,698'22	471'74	2,055'84	899'02	1,592'08	62'96	7,926'08	27'90
11. Chachundra ...	5,571'79	1,492'47	403'55	505'59	1,101'88	795'04	4,580'46	309'84
12. Tawa Valley ...	2,678'02	734'88	1,787'27	473'94	83'85	...	8,193'39	55'95
Total for the Tahsil ...	70,556'96	16,489'76	19,092'18	2,564'82	11,022'68	9,822'31	85,984'95	2,506'43
MULTAI								
1. Multai-Khaloti ...	910'74	76'73	319'26	...	39'03	9'23	1,384'09	...
2. Masod-Pattan ...	20,482'31	2,480'94	1,082'16	...	4,667'17	2,677'05	4,535'38	742'41
3. Jawalkhera ...	11,871'26	5,512'83	895'44	2,145'53	2,247'79	1,284'61	8,699'09	848'13
4. Dahawa-Dunawa...	10,873'01	9,187'39	965'29	3,168'68	2,231'85	865'99	12,101'60	1,118'87
5. Tawa Valley ...	401'90	312'74	374'08	247'21	15'00	20'02	3,447'39	1'00
...	3,398'00	1,382'91	532'47	570'17	344'86	430'02	14,104'58	810'53
...	1,753'05	621'54	223'61	501'27	172'48	84'68	4,348'57	87'41

classified according to Crops.

SETTLEMENT.

Juar.	Juar-Tur.	Tili.	Jagni.	Linseed.	Linseed-Wheat.	Cotton.	Miscellaneous.	Total.	Double-cropped.	Net area under crop.
10	11	12	13	14	15	16	17	18	19	20
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
TAHSIL.										
246'62	232'64	191'27	800'76	...	...	...	4,640'54	36,685'17	405'03	36,280'14
185'73	2,888'30	1,782'09	2,191'94	...	...	...	5,062'08	39,617'18	505'33	39,111'85
194'45	697'27	1,185'60	3,840'82	...	...	...	6,304'63	51,234'56	573'43	50,661'13
316'16	646'03	457'61	909'83	...	...	...	1,640'98	11,191'29	21'96	11,169'33
1,532'82	7,434'29	2,007'87	6,456'12	2'56	...	...	8252'33	50,766'43	635'10	50,131'33
3,294'01	3,409'98	2,539'67	564'82	...	...	1,645'70	1,438'94	14,506'94	40'76	14,466'18
378'85	6,508'82	1,088'28	3,943'38	88'46	...	...	3,441'33	29,183'23	114'93	29,068'30
2,112'52	15,558'06	2,848'50	13,170'56	124'12	59'47	...	5,915'97	60,448'53	738'73	59,709'80
89'38	453'68	1,465'38	185'65	3'60	...	...	1,865'98	12,201'45	152'81	12,048'64
272'96	124'62	868'93	1,128'63	3'69	...	...	2,988'16	21,120'83	78'85	21,041'98
413'14	984'40	93'60	2,442'83	92'61	...	...	1,535'42	20,322'62	336'84	19,985'78
104'09	744'08	2,462'10	555'68	52'03	...	...	3,284'91	21,210'19	515'98	20,694'21
9,140'73	39,682'17	16,990'90	36,191'02	367'07	59'47	1,645'70	46,371'27	368,488'42	4,119'75	364,368'67
TAHSIL.										
390'69	6,706'79	2,693'44	2,602'52	47'09	...	511'92	2,090'96	17,782'49	94'96	17,687'53
1,917'62	4,928'02	729'53	6,640'37	1,241'04	2,010'19	...	7,742'59	62,476'78	2,383'23	60,093'55
1,340'16	5,005'68	488'59	5,815'89	948'53	926'47	0'75	4,816'67	52,847'42	1,903'30	50,944'12
1,889'82	10,182'23	1,172'37	9,430'22	222'83	289'76	23'06	6,156'01	69,878'98	2,406'17	67,472'81
136'69	169'05	275'47	224'07	39'68	5'25	16'91	918'59	6,605'05	3'72	6,601'33
470'43	1,589'25	165'72	2,500'24	1'30	1'06	2'98	3,654'24	29,368'76	99'19	29,269'57
917'87	7,059'55	1,869'40	3,164'37	17'82	109'39	152'66	3,470'95	24,554'62	240'59	24,314'03
7,063'28	35,640'57	7,394'52	30,377'68	3,118'29	3,342'12	708'28	28,260'01	263,514'10	7,131'16	256,382'94
16,204'01	75,322'74	24,385'42	66,568'70	3,485'35	3,401'59	2,353'98	74,631'28	632,002'52	11,250'91	620,751'61

TABLE III.—Cropped are

Assessment Group.		COMPARE AS AT							
		Wheat.	Wheat-Gram (Birra).	Gram.	Masur.	Tiwra.	Kodon and Kutki.	Sugarcane.	Juar.
		21	22	23	24	25	26	27	28
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
BETUL									
1. Betul ...	...	21,698'76	9,048'48	508'73	482'13	419'96	2,532'83	1,338'98	320'51
2. Dhaba ...	...	6,327'76	3,594'14	1,162'35	160'00	21'72	16,720'60	364'34	1,702'92
3. Nasirabad ...	...	13,867'86	11,246'53	2,490'95	720'88	3'13	20,247'56	385'96	1,168'93
4. Chandu ...	...	2,516'18	467'99	673'27	547'26	...	4,242'35	9'50	469'91
5. Tapti ...	...	16,696'90	9,668'54	1,471'87	1,811'32	75'48	11,038'41	521'67	10,605'71
6. Betul-Khaloti ...	...	657'77	...	211'28	19'94	...	1,501'14	5'00	3,264'42
7. Bhensdehi ...	...	11,013'07	4,158'04	741'13	1,545'19	14'75	4,387'29	334'25	6,484'06
8. Atner ...	...	17,805'64	5,820'59	2,330'10	2,540'58	134'06	6,139'40	566'58	14,016'17
9. Bhawargarh ...	...	1,322'59	79'13	525'68	17'69	...	4,034'07	...	51'70
10. Khamapur ...	...	4,350'79	4,020'62	1,406'17	247'72	5'60	7,638'40	24'00	534'99
11. Chachundra ...	...	8,161'05	3,377'63	632'92	696'82	48'30	4,928'21	423'90	934'36
12. Tawa Valley ...	...	4,343'23	1,450'11	1,041'81	17'42	0'90	7,171'23	101'91	79'42
Total for the Tahsil ...		108,761'60	52,931'80	13,196'26	8,806'95	723'90	90,581'49	4,076'09	39,633'10
MULTAI									
1. Multai-Khaloti ...	...	1,837'37	919'86	472'15	153'15	...	1,615'68	4'00	4,908'33
2. Masod-Pattan ...	...	31,452'46	12,230'71	2,348'74	5,008'26	677'29	3,389'63	1,923'87	35,514'32
3. Jawalkhera ...	...	26,371'36	22,491'23	2,429'01	2,986'90	501'37	5,379'00	1,429'75	3,278'88
4. Dahawa-Dunawa ...	...	25,931'86	20,088'05	1,786'99	2,224'89	28'41	14,227'37	1,616'95	6,051'49
5. Tawa Valley ...	...	1,087'81	300'16	546'25	25'08	0'78	2,599'61	1'12	45'68
6. Aonria-Bordehi ...	...	7,495'32	273'41	2,954'45	135'12	35'39	12,619'37	316'34	1,222'91
7. Chichanda ...	...	5,256'54	5,389'70	744'18	1,069'95	3'93	4,950'52	104'50	10,623'96
Total for the Tahsil ...		99,432'72	61,693'12	11,281'77	11,603'35	1,247'17	41,781'18	5,396'53	29,682'57
TOTAL FOR THE DISTRICT ...		208,194'32	114,624'92	24,478'03	20,410'30	1,971'07	135,362'67	9,472'62	69,315'67

classified according to Crops.—(Concl'd.)

FORMER SETTLEMENT.

Juar-Tur.	Tilli.	Jagni.	Opium.	Linseed.	Cotton.	Miscella- neous.	Total.	Double- cropped.	Net area under crop.
29	30	31	32	33	34	35	36	37	38
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
TAHSIL.—(Concl'd.)									
83'23	37'40	136'65	342'01	...	...	619'06	37,568'73	...	37,568'73
3'30	4'45	700'85	3'50	...	...	1,636'78	32,402'71	...	32,402'71
19'75	19'75	302'33	54'71	...	...	2,161'90	52,780'24	...	52,780'24
8'50	47'66	81'19	...	...	...	855'42	9,919'23	...	9,919'23
184'31	178'33	1,777'04	176'29	...	...	1,739'01	55,944'88	...	55,944'88
1,139'37	128'67	145'75	...	...	10'25	1,066'79	8,150'38	...	8,150'38
12'50	161'00	545'25	61'25	...	...	843'78	30,301'56	...	30,301'56
856'38	865'56	3,115'39	365'28	74'04	...	2,017'75	56,646'52	...	56,646'52
...	150'21	85'79	...	...	...	984'83	7,251'69	...	7,251'69
...	63'28	288'66	...	...	...	2,693'16	21,273'39	...	21,273'39
155'30	58'04	1,136'29	60'45	4'18	...	666'93	21,284'38	...	21,284'38
249'32	399'04	88'80	27'26	...	...	1,269'68	16,240'13	...	16,240'13
TAHSIL.—(Concl'd.)									
2,710'96	2,203'39	8,403'99	1,090'75	78'22	10'25	16,555'09	349,763'84	...	349,763'84
427'13	299'04	679'60	3'00	...	...	1,904'95	13,224'26	...	13,224'26
2,124'98	134'34	2,373'25	736'84	87'57	...	3,615'63	69,654'89	...	69,654'89
28'10	235'21	1,791'36	994'73	...	...	943'94	68,860'84	...	68,860'84
63'28	66'14	1,640'01	991'23	...	...	702'69	75,419'36	...	75,419'36
...	52'36	56'51	...	...	...	784'34	5,499'70	...	5,499'70
16'63	30'92	986'93	117'19	...	...	1,622'04	27,826'02	...	27,826'02
1,389'38	262'23	965'45	44'50	...	...	495'41	31,300'25	...	31,300'25
4,049'50	1,080'24	8,493'11	2,887'49	87'57	...	10,069'00	291,785'32	...	291,785'32
6,760'46	3,283'63	16,897'10	3,978'24	165'79	10'25	26,624'09	641,549'16	...	641,549'16

TABLE IV.—Details of

Assessment Group.	AT PRESENT				
	OCCUPIED AREA.				
	Area in cultivation.			Area out of cultivation, i. e., waste and fallow of more than 3 years.	Total.
	Under crop.	Fallow of 3 years or under.	Total.		
1	2	3	4	5	6
	Acres.	Acres.	Acres.	Acres.	Acres.
BETUL					
1. Betul ...	36,280'14	3,686'38	39,966'52	2,712'76	42,679'28
2. Dhaba ...	39,111'85	19,375'61	58,487'46	9,031'53	67,518'99
3. Narsirabad ...	50,661'13	25,288'35	75,949'48	7,439'38	83,388'86
4. Chandu ...	11,169'33	5,334'94	16,504'27	2,424'19	18,928'46
5. Tapti ...	50,131'33	17,926'30	68,057'63	10,775'73	78,833'36
6. Betul-Khaloti ...	14,466'18	3,316'51	17,782'69	4,864'13	22,646'82
7. Bhensdehi ...	29,068'30	11,736'26	40,804'56	10,240'49	51,045'05
8. Atner ...	59,709'80	15,218'69	74,928'49	14,524'25	89,452'74
9. Bhawargarh ...	12,048'64	7,420'05	19,468'69	4,640'94	24,109'63
10. Khamapur ...	21,041'98	12,938'73	33,980'71	7,247'99	41,228'70
11. Chachundra ...	19,985'78	8,164'65	28,150'43	6,318'50	34,468'93
12. Tawa Valley ...	20,694'21	10,978'89	31,673'10	6,741'52	38,414'62
Total for the Tahsil ...	364,368'67	141,385'36	505,754'03	86,961'41	592,715'44
MULTAI					
1. Multai-Khaloti ...	17,687'53	5,705'30	23,392'83	4,785'94	28,178'77
2. Masod-Pattan ...	60,093'55	12,396'06	72,489'61	12,832'33	85,321'94
3. Jawalkhera ...	50,944'12	19,124'50	70,068'62	16,910'65	86,979'27
4. Dahawa-Dunawa ...	67,472'81	23,330'96	90,803'77	19,893'22	1,10,696'99
5. Tawa-Valley ...	6,601'33	4,063'77	10,665'10	2,619'30	13,284'40
6. Aonria-Bordehi ...	29,269'57	17,864'12	47,133'69	13,422'90	60,556'59
7. Chichanda ...	24,314'03	10,836'40	35,150'43	12,759'56	47,909'99
Total for the Tahsil ...	256,382'94	93,321'11	349,704'05	83,223'90	432,927'95
TOTAL FOR THE DISTRICT ...	620,751'61	234,706'47	855,458'08	170,185'31	1,025,643'39

Village areas.

SETTLEMENT.

UNOCCUPIED.						AREA IRRIGATED.		
Groves.	Tree-forest.	Scrub jungle and grass.	Under water, hill, rock and covered by roads and buildings.	Total unoccupied area.	Total area.	From tanks.	From other sources.	Total.
7	8	9	10	11	12	13	14	15
Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
TAHSIL.								
1'09	2,285'78	2,533'71	3,329'86	8,150'44	50,829'72	...	965'29	965'29
...	15,155'74	6,477'21	14,440'16	36,073'11	103,592'10	...	172'69	172'69
2'09	15,836'66	6,645'32	15,103'53	37,587'60	120,976'46	...	388'54	388'54
...	32,498'48	2,979'78	6,148'43	41,626'69	60,555'15	...	7'21	7'21
4'17	17,893'48	4,795'92	12,076'61	34,770'18	113,603'54	...	383'17	383'17
...	8,961'69	4,369'44	12,725'30	26,056'43	48,703'25	...	3'12	3'12
...	29,467'95	5,681'52	4,260'74	39,410'21	90,455'26	...	196'24	196'24
...	13,270'18	7,625'97	11,369'08	32,265'23	121,717'97	...	491'32	491'32
...	32,158'93	3,624'17	6,776'36	42,559'46	66,669'09	0'50	...	0'50
2'27	66,065'21	16,824'63	21,319'13	104,211'29	145,439'99	...	28'02	28'02
...	6,773'99	3,108'20	4,702'73	14,584'92	49,053'85	...	361'25	361'25
...	22,919'55	5,423'05	9,927'62	38,270'22	76,684'84	3'25	34'51	37'76
9'62	263,287'64	70,088'92	122,179'60	455,565'78	1,048,281	3'75	13,031'36	3,035'11
TAHSIL.								
1'98	9,007'47	4,273'67	14,935'43	28,218'55	56,397'32	...	29'72	29'72
...	2,344'18	4,720'13	9,747'03	16,811'34	102,133'28	...	1,207'44	1,207'44
...	1,131'50	4,146'63	5,125'41	10,403'54	97,382'81	...	2,255'71	2,255'71
6'17	6,209'35	5,797'81	6,683'15	18,696'48	129,393'47	...	2,797'86	2,797'86
0'45	12,043'31	1,694'65	7,804'56	21,542'97	34,827'37	...	1'04	1'04
0'11	5,799'46	6,559'88	6,833'12	19,192'57	79,749'16	0'10	870'45	870'55
...	6,947'86	4,707'72	10,646'79	22,302'37	70,212'36	...	272'95	272'95
8'71	43,483'13	31,900'49	61,775'49	137,167'82	570,095'77	0'10	7,435'17	7,435'27
18'33	306,770'77	101,989'41	183,955'09	592,733'60	1,618,376'99	3'85	10,466'53	10,470'38

TABLE IV.—Details of

Assessment Group.					AT LAST	
	Number of irrigation wells.	Number of artificial tanks.	Number of Ploughs.	Number of Plough-cattle.	Area cropped.	Area cropped <i>plus</i> new fallow (cultivated area).
	16	17	18	19	20	21
					Acres.	Acres.
						BETUL
1. Betul ...	551	...	1,952	4,890	37,568'73	38,671'13
2. Dhaba ...	116	...	2,470	5,418	32,402'71	34,866'36
3. Nasirabad ...	277	2	3,030	6,860	52,780'24	54,288'75
4. Chandu ...	6	...	400	779	9,919'23	10,081'75
5. Tapti ...	242	...	2,051	4,628	55,944'88	58,201'21
6. Betul-Khaloti...	1	...	1,020	2,448	8,150'38	9,752'91
7. Bhensdehi ...	73	4	1,691	3,641	30,301'56	33,141'64
8. Atner ...	192	15	2,663	7,299	56,646'52	60,713'06
9. Bhowargarh ...	...	1	1,105	2,103	7,251'69	8,389'25
10. Khamapur ...	21	...	917	1,973	21,273'39	23,013'14
11. Chachundra...	173	...	739	2,267	21,284'38	24,916'11
12. Tawa-Valley...	23	...	799	1,883	16,240'13	20,116'87
Total for the Tahsil ...	1,675	22	18,837	44,189	349,763'84	376,170'18
						MULTAI
1. Multai-Khaloti ...	...	...	653	2,167	13,224'26	13,801'33
2. Masod-Pattan ...	321	27	3,218	8,404	69,654'89	71,535'39
3. Jawalkhera ...	923	...	3,125	8,221	68,860'84	77,368'24
4. Dahawa-Dunawa ...	1,391	...	3,409	10,235	75,419'36	86,457'77
5. Tawa Valley ...	...	...	624	1,618	5,499'70	7,181'61
6. Aonria-Bordehi ...	420	...	3,174	6,476	27,826'02	30,219'20
7. Chichanda ...	152	...	1,211	2,809	31,300'25	33,960'80
Total for the Tahsil ...	3,207	27	15,414	39,930	291,785'32	320,524'34
TOTAL FOR THE DISTRICT ...	4,882	49	34,251	84,119	641,549'16	696,694'52

Village areas.—(Concl'd.)

SETTLEMENT.

Occupied area,	Area unoccupied.	Total area.	Area irrigated.	Number of wells.	Number of tanks.	Number of Ploughs.	Number of Plough-cattle.
22	23	24	25	26	27	28	29
Acres.	Acres.	Acres.	Acres.				
TAHSIL.—(Concl'd.)							
40,121'75	8,671'18	48,792'93	1,613'18	326	...	...	...
38,491'47	72,137'08	110,628'55	118'96	20	...	...	...
56,259'93	66,491'83	122,751'76	508'55	57	...	...	...
11,494'78	50,152'79	61,647'57	33'25	5	...	...	...
64,265'63	47,723'92	111,989'55	692'99	161	...	...	...
11,869'96	38,500'94	50,370'90	5'00	...	...	...	...
35,191'05	54,283'54	89,474'59	384'25	156	...	...	...
67,698'23	53,030'71	120,728'94	936'97	182	...	...	...
10,133'89	54,807'96	64,941'85	...	...	...	...	...
24,633'21	124,980'20	149,613'41	4'00	1	...	...	...
31,077'72	16,907'36	47,985'08	547'88	45	...	...	...
24,398'17	48,742'06	73,140'23	103'29	41	...	...	...
415,635'79	636,429'57	1,052,065'36	4,948'32	994	...	...	...
TAHSIL.—(Concl'd.)							
17,465'60	40,209'60	57,675'20	7'00	...	...	...	...
81,310'41	21,243'23	102,553'64	2,461'71	789	1	...	...
85,512'33	12,523'67	98,036'00	2,722'78	561	...	...	...
104,794'39	26,397'89	131,192'18	2,826'96	650	...	...	...
9,639'95	24,355'09	33,995'04	1'12	1	...	...	...
33,637'73	42,573'18	76,210'91	447'38	137	...	...	...
38,764'15	31,090'69	69,854'84	169'50	50	...	...	...
371,124'56	198,393'25	569,517'81	8,637'45	2,188	1	...	...
786,760'35	834,822'82	1,621,583'17	13,584'77	3,182	1	...	...

TABLE V

Assessment Group.	HELD BY MALGUZARS.				HELD BY MALIK-MAKBUZAS.		HELD BY REVENUE-FREE GRANTEES.		HELD BY ABSOLUTE OCCUPANCY TENANTS.		HELD BY OCCUPANCY TENANTS.	
	As sir.	Other than sir.	Total.	Area of total leased.	Number of holdings.	Area.	Number of holdings.	Area.	Number of holdings.	Area.	Number of holdings.	Area.
1	2	3	4	5	6	7	8	9	10	11	12	13
	Acres.	Acres.	Acres.	Acres.		Acres.		Acres.		Acres.		Acres.
1. Betul	6,430'58	1,386'80	7,817'38	880'22	52	1,258'91	14	157'31	663	10,710'56	1,447	13,659'9
2. Dhaba	4,311'14	1,866'52	6,177'66	336'50	28	491'99	1	6'77	215	4,482'80	359	26,901'83
3. Nasirabad	6,683'82	3,204'03	9,887'85	757'24	2	55'08	4	127'91	218	4,970'33	1,889	34,889'85
4. Chandu	242'06	600'21	842'27	...	1	13'22	...	...	21	426'89	231	5,186'29
5. Tapti	4,804'52	3,390'22	8,194'74	744'47	10	151'76	2	113'39	487	11,900'90	1,633	31,712'64
6. Betul-Khaloti	449'50	497'74	947'24	69'80	2	49'91	...	...	32	810'61	328	6,011'12
7. Bhensdehi	2,199'20	1,661'21	3,860'41	262'64	8	240'87	4	324'86	117	3,857'84	556	15,951'92
8. Atner	8,124'28	4,832'23	12,956'51	1,252'40	29	645'42	6	348'07	354	10,131'94	1,238	33,783'49
9. Bhawargarh	208'33	502'65	710'98	23'98	...	...	...	...	36	382'53	141	8,266'65
10. Khamapur	1,433'95	2,036'57	3,470'52	176'03	...	...	...	...	5	147'31	397	13,093'22
11. Chachundra	2,737'51	1,350'56	4,088'07	241'00	11	132'87	...	36'01	409	6,362'86	1,109	13,085'88
12. Tawa Valley	1,626'43	1,076'44	2,702'87	86'48	...	...	...	...	235	3,969'41	775	13,902'23
Total for the Tahsil	39,251'32	22,405'18	61,656'50	4,830'76	143	3,040'03	31	1,114'32	2,792	58,153'98	10,103	216,445'04
												MULTAI
1. Multai-Khaloti	432'85	561'99	994'84	114'21	6	103'59	1	12'00	52	1,437'61	365	9,321'74
2. Masod-Pattan	7,913'02	2,206'18	10,119'20	1,344'71	113	2,095'23	29	1,371'05	1,378	28,442'82	2,064	27,660'65
3. Jawalkhera	6,307'06	2,485'25	8,792'31	1,385'33	27	880'46	5	283'21	1,381	33,440'02	2,349	31,530'12
4. Dahawa-Dunawa	10,614'24	3,673'25	14,287'49	1,265'99	25	449'09	4	81'31	682	38,608'86	3,277	41,227'46
5. Tawa Valley	610'11	515'30	1,125'41	11'89	...	...	...	...	59	953'30	244	4,406'26
6. Aonria-Bordehi	6,712'26	3,110'33	9,822'59	339'77	18	281'80	10	93'41	747	7,812'52	1,895	23,386'46
7. Chichanda	862'00	919'20	1,781'20	59'07	...	...	...	...	130	4,722'34	866	23,360'53
Total for the Tahsil	33,451'54	13,471'50	46,923'04	4,520'97	189	3,810'17	49	1,840'98	4,429	115,417'47	11,060	160,893'22
TOTAL FOR THE DISTRICT	72,702'86	35,876'68	108,579'54	9,351'73	332	6,850'20	80	2,955'30	7,221	173,571'45	21,163	377,338'26

Details of Holdings.

Held by tenants of superior class in ordinary tenant right.	HELD BY ORDINARY TENANTS.		HELD BY RENT-FREE OR BY PRIVILEGED TENANTS.		Total occupied area to agree with Column 6 of Statement 4 (IV).	COMPARE AREAS AT FORMER SETTLEMENT.					
	Number of holdings.	Area.	As grant from malguzars.	In lieu of service.		Held by Malguzars.	Held by Malik-makbuzas.	Held by Revenue-free grantees.	Held by Absolute-occupancy tenants.	Held by Occupancy tenants.	Held by Ordinary tenants.
14	15	16	17	18	19	20	21	22	23	24	25
Acres.		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
TAHSIL.											
2,282'13	902	6,304'14	120'03	368'90	42,679'28	4,781'24	1,111'53	186'11	13,669'24	11,032'08	9,019'53
5,580'14	700	23,111'84	429'32	336'64	67,518'99	4,513'69	616'50	7'62	5,672'92	4,248'77	23,118'84
6,170'85	3,088	26,632'71	277'34	376'94	83,388'86	5,534'26	...	127'65	7,774'21	6,265'29	36,256'75
1,411'48	897	10,889'86	43'53	114'92	18,928'46	684'04	19'00	...	980'05	918'90	8,764'91
6,866'93	1,996	19,365'99	69'51	457'50	78,833'36	5,945'03	98'50	172'23	16,047'58	9,127'07	32,431'10
2,201'28	1,162	12,418'68	35'32	172'66	22,646'82	199'25	148'50	12'00	1,381'06	493'60	9,537'55
4,692'16	1,569	21,470'57	373'76	272'66	51,045'05	1,359'24	145'00	360'31	5,826'77	5,598'77	21,660'77
6,327'59	1,907	24,829'45	67'17	363'10	89,452'74	4,567'74	556'02	364'25	16,906'20	9,827'42	35,121'61
1,805'88	1,270	12,736'06	133'63	73'90	24,109'63	859'01	...	...	790'79	44'96	8,391'71
2,646'87	1,856	21,429'22	170'29	271'27	41,228'70	689'12	...	...	189'64	805'23	22,729'82
2,479'80	950	7,976'71	119'62	187'11	34,468'93	2,839'92	67'55	105'86	8,945'17	4,833'60	14,128'66
3,874'69	1,846	13,619'26	139'36	206'80	38,414'62	1,884'63	...	...	6,815'89	2,174'40	13,318'48
46,339'80	18,143	200,784'49	1,978'88	3,202'40	592,715'44	33,848'17	2,762'60	1,336'03	84,999'52	55,370'09	234,479'73
TAHSIL.											
3,447'25	907	12,670'34	24'82	166'58	28,178'77	611'93	79'95	56'60	2,611'35	2,713'78	11,267'21
3,440'63	1,009	11,675'00	43'86	473'50	85,321'94	5,298'30	1,371'56	2,501'19	36,615'60	17,447'83	17,621'27
4,355'46	686	6,992'88	124'84	579'97	86,979'27	7,235'09	621'00	579'10	43,466'47	15,090'03	18,008'58
6,740'43	1,316	8,386'31	315'67	600'37	110,696'99	8,088'56	200'25	623'39	50,672'94	14,466'86	30,180'55
1,209'60	781	5,396'70	23'18	169'95	13,284'40	695'39	...	...	1,893'46	1,156'32	5,858'86
6,490'54	1,810	12,264'20	211'89	193'18	60,556'59	4,457'78	383'19	81'26	10,341'77	5,217'71	13,074'31
4,134'43	941	13,580'40	26'19	304'90	47,909'99	1,200'70	...	...	6,571'02	7,913'55	22,800'10
19,818'34	7,450	70,965'83	770'45	2,488'45	432,927'95	27,587'75	2,655'95	3,841'54	152,172'61	64,006'08	118,810'88
6,158'14	25,593	271,750'32	2,749'33	5,690'85	1,025,643'39	61,435'92	5,418'55	5,177'57	237,172'13	119,376'17	353,290'61

TABLE VI.—Details of Malik-

Assessment Group.	AS AT FORMER SETTLEMENT.				
	Malik-makbuza.	TENANTS.			
		Absolute-occupancy.	Occupancy.	Ordinary.	Total.
	2	3	4	5	6
BETUL					
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1. Betul ...	1,002 7 0	16,356 2 2	11,793 7 0	8,929 11 4	37,079 4 6
2. Dhaba ...	417 12 0	1,687 12 3	1,614 6 0	5,693 15 3	8,996 1 6
3. Nasirabad ...	24 0 0	4,016 3 6	3,043 0 0	13,038 5 7	20,097 9 1
4. Chandu ...	2 0 0	415 13 2	255 15 3	2,149 5 2	2,821 1 7
5. Tapti ...	30 8 0	5,831 9 11	2,809 8 7	7,423 10 6	16,064 13 0
6. Betul-Khaloti ...	34 8 0	352 12 0	128 0 0	2,004 2 5	2,484 14 5
7. Bhensdehi ...	79 8 0	2,718 4 0	2,038 12 0	5,934 1 3	10,691 1 3
8. Atner ...	234 8 0	5,007 14 0	2,913 14 0	8,454 12 0	16,376 8 0
9. Bhawargarh ...	...	147 0 1	10 0 0	1,980 8 2	2,137 8 3
10. Khamapur ...	...	87 0 0	208 8 5	5,573 0 2	5,868 8 7
11. Chachundra ...	41 0 0	4,748 14 0	2,288 6 0	3,869 12 0	10,907 0 0
12. Tawa Valley ...	...	2,108 15 7	756 8 0	2,857 11 8	5,723 3 3
Total for the Tahsil ...	1,866 3 0	43,478 4 8	27,860 5 3	67,908 15 6	1,39,247 9 5
MULTAI					
1. Multai-Khaloti ...	23 8 0	514 10 6	293 8 0	1,385 6 6	2,193 9 0
2. Masod-Pattan ...	1,225 3 11	25,872 3 5	10,761 8 0	10,444 4 0	47,077 15 5
3. Jawalkhera ...	332 8 0	21,020 2 3	6,158 4 0	6,886 9 0	34,064 15 3
4. Dahawa-Dunawa ...	192 0 0	17,320 3 3	4,087 15 9	8,328 2 0	29,736 5 0
5. Tawa-Valley ...	...	439 8 0	237 0 0	1,025 8 10	1,702 0 10
6. Aonria-Bordehi ...	83 8 0	4,308 8 7	1,841 12 11	4,305 8 11	10,455 14 5
7. Chichanda ...	...	771 12 0	1,030 15 0	1,906 1 0	3,708 12 0
Total for the Tahsil ...	1,856 11 11	70,247 0 0	24,410 15 8	34,281 8 3	1,28,939 7 11
TOTAL FOR THE DISTRICT ...	3,722 14 11	1,13,725 4 8	52,271 4 11	1,02,190 7 9	2,68,187 1 4

makbuzas and Tenants' payments.

AS PAID PRIOR TO RE-SETTLEMENT.				AS ENHANCED (i. e. SANCTIONED) AT THE • RE-SETTLEMENT.		
TENANTS.				Malik-makbuza.	TENANTS.	
	Occupancy.	Ordinary.	Total.		Absolute- occupancy.	Occupancy.
8	9	10	11	12	13	14
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
13,733 12 9	14,842 5 6	9,646 15 2	38,223 1 5	1,647 9 0	15,990 14 4	17,727 13 11
1,656 2 3	7,529 9 6	9,720 10 6	18,906 6 3	563 12 0	1,934 12 0	9,103 0 8
3,613 8 0	13,422 2 3	14,335 6 3	31,371 0 6	82 4 0	4,089 15 0	16,532 13 2
226 12 0	1,300 2 0	3,381 6 6	4,908 4 0	2 0 0	247 2 0	1,545 4 0
4,746 8 11	7,927 11 0	8,055 3 9	20,739 7 8	92 8 0	5,429 4 4	10,000 12 4
282 1 0	1,481 8 9	5,233 13 3	6,997 7 0	29 0 0	317 14 0	1,911 5 9
1,845 6 0	3,844 13 6	7,669 10 1	13,359 13 7	306 4 0	2,191 5 4	4,965 6 8
3,805 10 6	8,383 13 7	8,689 14 8	20,879 6 9	419 12 0	4,510 12 7	11,026 0 10
83 12 0	2,043 13 0	4,222 9 0	6,350 2 0	...	90 15 0	2,264 6 0
81 2 0	3,770 4 6	6,931 1 4	10,782 7 10	...	96 8 0	4,444 14 6
36 12 0	3,918 2 6	4,310 13 4	3,830 9 10	91 8 0	4,509 1 0	5,863 14 10
1,599 10 0	2,899 10 4	5,293 0 11	9,792 5 3	...	1,742 11 4	3,853 15 0
2,103 4 6	35,592 7 11	71,756 11 3	87,020 4 9	1,94,369 7 11	3,234 9 0	41,151 2 11
						89,239 11 8
TAHSIL.						
23 0 0	371 13 6	1,418 2 4	3,699 12 7	5,489 12 5	44 0 0	403 10 0
1,590 9 4	21,109 11 9	16,484 8 2	9,342 6 7	46,936 10 6	2,655 15 0	25,560 6 9
107 0 8	17,320 1 2	12,860 4 0	6,380 3 2	36,560 8 4	578 0 0	20,592 15 11
193 0 1	15,042 1 11	11,752 0 1	5,816 3 10	32,610 5 10	276 2 0	18,009 12 11
...	337 8 0	778 12 0	1,898 0 0	3,014 4 0	...	353 6 0
83 12 0	3,632 15 9	5,324 9 1	5,713 10 8	14,671 3 6	156 0 0	4,034 9 3
...	694 2 0	3,025 5 10	3,226 4 1	6,945 11 11	...	856 1 0
						3,950 9 0
2,300 6 1	58,508 6 1	51,643 9 6	36,076 8 11	1,46,228 8 6	3,710 1 0	69,810 13 10
						66,230 6 3
4,403 10 7	94,100 14 0	1,23,400 4 9	1,23,096 13 8	3,40,598 0 5	6,944 10 0	1,10,962 0 9
						1,55,470 1 11

TABLE VI.—Details of Malik-

Assessment Group.	AS ENHANCED (i.e., SANCTIONED) AT THE RE-SETTLEMENT. (Concl'd.)		AS ANNOUNCED.		
	TENANTS.		Malik-makbuza.	TENANTS.	
	Ordinary.	Total.		Absolute-occupancy.	Occupancy.
	15	16	17	18	19
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1. Betul ...	10,051 0 8	43,769 12 11	1,609 9 0	15,782 11 4	18,248 7 2
2. Dhaba ...	10,291 8 9	21,329 5 5	563 12 0	1,882 6 0	8,968 5 2
3. Nasirabad ...	15,349 10 9	35,972 6 11	82 4 0	4,028 12 0	15,911 10 2
4. Chandu ...	3,777 5 0	5,569 11 0	2 0 0	247 2 0	1,460 10 0
5. Tapti...	8,093 2 0	23,523 2 8	92 8 0	5,393 6 4	9,744 13 4
6. Betul-Khaloti ...	5,503 4 0	7,732 7 9	6 12 0	317 14 0	1,227 8 9
7. Bhensdehi ...	8,523 0 0	15,679 12 0	262 4 0	2,177 5 4	4,671 0 8
8. Atner ...	9,470 2 8	25,037 0 1	419 12 0	4,371 6 7	10,861 10
9. Bhawargarh ...	4,603 11 6	6,959 0 6	...	90 15 0	2,189 4 0
10. Khamapur ...	7,647 13 0	12,189 3 6	...	90 4 0	4,170 8 6
11. Chachundra ...	4,190 3 3	14,563 3 1	91 8 0	4,452 14 0	5,815 15 6
12. Tawa Valley ...	5,860 0 0	11,456 10 4	...	1,737 11 4	3,776 0 0
Total for the Tahsil ...	93,360 13 7	2,23,751 12 2	3,130 5 0	40,572 11 11	87,539 13
					MULTAI
1. Multai-Khaloti ...	3,934 8 6	6,232 5 10	44 0 0	396 8 0	1,878 15 7
2. Masod-Pattan ...	10,368 7 9	56,551 15 7	2,655 15 0	25,374 13 2	20,380 12 4
3. Jawalkhera ...	6,117 7 11	43,095 5 6	578 0 0	20,288 7 11	16,166 14 7
4. Dahawa-Dunawa ...	5,693 1 1	39,023 0 8	279 2 0	17,707 11 1	15,282 3 8
5. Tawa Valley ...	2,184 8 0	3,637 9 0	...	354 2 0	1,078 4 0
6. Aonria-Bordehi ...	6,219 8 8	17,211 15 5	159 0 0	3,981 13 9	6,878 5 6
7. Chichanda ...	3,105 5 5	7,911 15 5	...	837 1 0	3,803 7 1
Total for the Tahsil ...	37,622 15 4	1,73,664 3 5	3,716 1 0	68,940 8 11	65,468 14 9
TOTAL FOR THE DISTRICT ...	1,30,983 12 11	3,97,415 15 7	6,846 6 0	1,09,513 4 10	1,53,008 12 4

makbuzas' and Tenants' payments.—(Concl'd.)

		COMPARE AS DEDUCED FROM RENT.				
		Malik-makbuzas.	TENANTS.			
Ordinary.	Total.		Absolute-occupancy.	Occupancy.	Ordinary.	Total.
20	21	22	23	24	25	26
TAHSIL.—(Concl'd.)						
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
9,761 1 2	43,686 3 8	1,966 1 0	16,361 4 0	17,902 7 0	8,723 0 0	42,986 11 0
10,586 9 6	21,437 4 8	564 14 0	1,950 14 0	8,592 4 0	7,876 4 0	18,419 6 0
15,217 4 0	35,157 10 2	146 5 0	4,104 0 0	16,514 0 0	12,751 10 0	33,369 10 0
3,684 6 6	5,392 2 6	2 3 0	259 12 0	1,528 6 0	3,169 0 0	4,957 2 0
7,826 4 0	22,964 7 8	148 0 0	5,715 14 0	9,924 13 0	6,489 13 0	22,130 8 0
5,382 5 0	7,527 11 9	29 6 0	332 5 0	1,977 13 0	4,595 7 0	6,905 9 0
7,956 9 0	14,804 15 0	546 13 0	2,425 10 0	5,395 11 0	7,517 1 0	15,338 6 0
9,304 3 8	24,537 4 7	683 7 0	4,854 7 0	11,701 1 0	8,761 8 2	25,317 0 2
4,716 14 0	6,997 1 0	...	106 3 0	2,007 2 0	3,385 4 0	5,498 9 0
7,356 6 9	11,617 3 3	...	112 6 0	4,551 8 0	6,387 11 0	11,051 9 0
4,168 11 3	14,437 8 9	130 3 0	4,862 14 0	6,352 2 0	3,905 0 0	15,120 0 0
5,869 9 0	11,383 4 4	...	1,930 8 0	3,853 10 0	4,715 4 0	10,499 6 0
91,830 3 10	2,19,942 13 4	4,217 4 0	43,016 1 0	90,300 13 0	78,276 14 2	2,11,593 12 2
AHSIL.—(Concl'd.)						
3,771 8 6	6,047 0 1	49 4 0	420 2 0	1,975 2 0	3,275 9 0	5,670 13 0
10,166 3 9	55,921 13 3	3,860 13 0	26,719 12 0	21,537 9 0	9,680 15 0	57,938 4 0
6,161 7 1	42,616 13 7	756 8 0	21,756 8 0	16,925 1 0	5,556 11 0	44,238 4 0
5,543 3 3	38,533 2 0	372 11 0	18,664 5 0	15,865 8 0	4,983 14 0	39,513 11 0
2,266 1 0	3,698 7 0	...	385 10 0	1,117 11 0	1,857 11 0	3,361 0 0
6,194 14 4	17,055 1 7	242 14 0	4,309 2 0	7,115 11 0	5,019 8 0	16,444 5 2
3,083 8 5	7,724 0 6	...	917 12 0	3,978 1 0	2,316 3 0	7,212 0 0
37,186 14 4	1,71,596 6 0	5,282 2 0	73,173 3 0	68,514 11 0	32,690 7 0	1,74,378 5 0
29,017 2 2	3,91,539 3 4	9,499 6 0	1,16,189 4 0	1,58,813 8 0	1,10,967 5 2	3,85,972 1 2

TABLE VII.—Details of Rates per occupied

Assessment Group.	AT FORMER SETTLEMENT.				
	Malik-makbuzas.	TENANTS.			
		Absolute-occupancy.	Occupancy.	Ordinary.	Total.
1	2	3	4	5	6
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
BETUL					
1. Betul	0 13 2	1 3 1	1 1 1	0 15 10	1 1 7
2. Dhaba	0 10 9	0 4 9	0 6 0	0 3 11	0 4 4
3. Nasirabad ... ..	.....	0 8 3	0 7 9	0 5 9	0 6 4
4. Chandu	0 1 8	0 6 8	0 4 5	0 3 11	0 4 2
5. Tapti	0 3 8	0 5 9	0 4 11	0 3 7	0 4 5
6. Betul-Khaloti	0 3 6	0 4 1	0 4 1	0 3 4	0 3 5
7. Bhensdehi	0 6 4	0 7 5	0 5 9	0 4 4	0 5 2
8. Atner	0 5 1	0 4 8	0 4 8	0 3 10	0 4 3
9. Bhawargarh ... ..	.....	0 2 11	0 3 6	0 3 9	0 3 8
10. Khamapur ... ..	.....	0 7 4	0 4 1	0 3 11	0 3 11
11. Chachundra	0 6 4	0 8 5	0 7 7	0 4 4	0 6 3
12. Tawa Valley ... ..	.....	0 4 11	0 5 6	0 3 5	0 4 1
Total for the Tahsil	0 9 6	0 8 2	0 8 0	0 4 7	0 5 11
MULTAI					
1. Multai-Khaloti	0 3 10	0 3 1	0 1 8	0 1 11	0 2 1
2. Masod-Pattan	0 8 5	0 11 3	0 9 10	0 9 5	0 10 1
3. Jawalkhera	0 6 8	0 7 8	0 6 6	0 6 1	0 7 1
4. Dahawa-Dunawa	0 8 5	0 5 5	0 4 6	0 4 3	0 4 1
5. Aonria-Bordehi	0 2 11	0 6 8	0 5 7	0 5 3	0 5 1
6. Tawa Valley ... ..	.....	0 3 8	0 3 3	0 2 9	0 3 1
7. Chichanda ... ..	.....	0 1 10	0 2 1	0 1 4	0 1 1
Total for the Tahsil	0 7 1	0 7 4	0 6 1	0 4 7	0 6 1
TOTAL FOR THE DISTRICT	0 8 4	0 7 8	0 7 0	0 4 7	0 6 1

AS BEFORE REVISION.					AS REVISED AT RE-SETTLEMENT.				
Malik-makbuzas.	TENANTS.				Malik-makbuzas.	TENANTS.			
	Absolute-occupancy.	Occupancy.	Ordinary.	Total.		Absolute-occupancy.	Occupancy.	Ordinary.	Total.
7	8	9	10	11	12	13	14	15	16
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
TAHSIL.									
0 12 10	1 4 6	1 1 4	1 1 11	1 2 6	1 3 5	1 7 10	1 4 9	1 2 8	1 5 2
0 13 10	0 5 10	0 4 5	0 5 5	0 5 0	1 2 2	0 6 10	0 5 4	0 5 8	0 5 8
...	0 11 7	0 6 1	0 6 11	0 6 10	0 8 3	0 13 1	0 7 7	0 7 5	0 7 11
0 2 5	0 8 5	0 4 0	0 4 4	0 4 4	0 2 5	0 9 3	0 4 9	0 4 10	0 4 11
0 3 0	0 6 4	0 3 11	0 4 11	0 4 9	0 5 7	0 7 3	0 5 0	0 4 11	0 5 4
0 8 0	0 5 6	0 3 11	0 5 8	0 5 2	0 9 3	0 6 3	0 5 1	0 6 0	0 5 9
0 4 5	0 7 7	0 3 10	0 4 8	0 4 7	0 7 5	0 9 1	0 4 11	0 5 2	0 5 5
0 4 5	0 6 0	0 3 11	0 4 5	0 4 5	0 7 8	0 7 1	0 5 2	0 4 10	0 5 4
...	0 3 6	0 3 11	0 4 8	0 4 4	...	0 3 9	0 4 4	0 5 0	0 4 9
...	0 8 9	0 4 7	0 4 7	0 4 7	...	0 10 5	0 5 5	0 5 0	0 5 2
0 4 5	0 9 10	0 5 3	0 5 10	0 6 5	0 7 0	0 11 4	0 7 2	0 6 4	0 7 8
...	0 6 5	0 3 4	0 4 10	0 4 5	...	0 7 0	0 4 5	0 5 4	0 5 2
0 9 4	0 9 8	0 5 3	0 5 7	0 5 11	0 14 1	0 11 3	0 6 7	0 6 0	0 6 10
TAHSIL.									
0 3 3	0 4 1	0 2 5	0 3 8	0 3 3	0 5 9	0 4 5	0 3 3	0 3 10	0 3 8
0 10 3	0 11 10	0 9 6	0 9 10	0 10 6	1 0 2	0 14 4	0 11 11	0 10 11	0 12 8
0 5 5	0 8 3	0 6 6	0 9 0	0 7 7	0 8 2	0 9 11	0 8 3	0 8 7	0 9 0
0 6 5	0 6 2	0 4 6	0 6 1	0 5 5	0 9 2	0 7 5	0 5 11	0 6 0	0 6 6
0 3 7	0 7 5	0 3 7	0 4 10	0 4 8	0 6 10	0 8 3	0 4 9	0 5 3	0 5 6
...	0 5 7	0 2 9	0 4 7	0 4 0	...	0 5 11	0 3 11	0 5 3	0 4 10
...	0 2 4	0 2 0	0 2 10	0 2 5	...	0 2 10	0 2 8	0 2 9	0 2 9
0 8 0	0 8 1	0 5 1	0 5 8	0 6 2	0 12 6	0 9 8	0 6 7	0 5 11	0 7 4
0 8 6	0 8 8	0 5 2	0 5 7	0 6 0	0 13 2	0 10 3	0 6 7	0 6 0	0 7 1

TABLE VIII.—Siwai Income.

Assessment Group.	Estimated income at time of former Settlement.	Recorded in year of re-Settlement.	Assumed as average.
1	2	3	4
	Rs. a. p.	Rs. a. p.	Rs. a. p.
BETUL TAHSIL.			
1. Betul ...	287 8 0	471 0 0	354 8 0
2. Dhaba ...	994 4 0	9,508 14 0	5,700 0 0
3. Nasirabad ...	1,332 0 0	7,168 3 0	4,895 8 0
4. Chandu ...	840 12 0	1,960 0 6	1,592 0 0
5. Tapti ...	922 10 0	1,980 5 0	1,516 8 0
6. Betul-Khaloti ...	379 0 0	1,815 12 0	1,316 0 0
7. Bhensdehi ...	484 0 0	1,392 8 0	1,029 8 0
8. Atner ...	506 0 0	1,631 7 0	1,141 0 0
9. Bhawargarh ...	1,023 0 0	2,630 4 0	1,888 0 0
10. Khamapur ...	1,939 0 0	3,582 5 9	2,798 8 0
11. Chachundra ...	290 0 0	1,188 0 0	837 0 0
12. Tawa Talley ...	639 0 0	1,577 8 0	1,116 0 0
Total for the Tahsil ...	9,637 2 0	35,306 3 3	25,184 8 0
MULTAI TAHSIL.			
1. Multai-Khaloti ...	1,393 0 0	3,016 2 0	2,006 0 0
2. Masod-Pattan ...	324 0 0	859 0 0	653 0 0
3. Jawalkhera ...	44 0 0	153 10 0	111 8 0
4. Dahawa-Dunawa ...	195 0 0	625 10 0	443 0 0
5. Tawa Valley ...	552 0 0	929 10 4	720 0 0
6. Aonria-Bordehi ...	225 0 0	2,725 3 0	1,849 0 0
7. Chichanda ...	349 0 0	1,323 12 0	983 0 0
Total for the Tahsil ...	3,082 0 0	9,632 15 4	6,765 8 0
TOTAL FOR THE DISTRICT ...	12,719 2 0	44,939 2 7	31,950 0 0



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TABLE IX.—Rental value assumed

Assessment Group.						SIR AND KHUDKASHT.		
						AREA LEASED OUT.		AREA CULTIVATED BY MALGUZARS.
						Rental value at sanctioned rates.	Compare rents actually received.	Rental value at sanctioned rates.
						2	3	4
1								
						Rs. a. p.	Rs. a. p.	BETUL Rs. a. p.
1. Betul	...	...	...	...	...	1,335 9 0	2,057 11 0	11,741 5 0
2. Dhaba	...	...	...	...	...	280 14 0	320 6 0	3,194 7 0
3. Nasirabad	...	...	...	...	...	523 3 0	635 14 0	6,129 8 0
4. Chandu	...	...	...	...	...	.....	.....	441 10 0
5. Tapti	...	...	...	...	...	453 4 0	1,235 14 0	3,121 2 0
6. Betul-Khaloti	...	...	...	...	...	30 10 0	97 9 0	453 12 0
7. Bhensdehi	...	...	...	...	...	232 5 0	417 13 0	2,859 6 0
8. Atner	...	...	...	...	...	518 9 0	1,709 6 0	4,929 12 0
9. Bhawargarh	...	...	...	...	...	27 7 0	60 7 0	387 14 0
10. Khamapur	...	...	...	...	...	75 13 0	200 8 7	1,457 5 0
11. Chachundra	...	...	...	...	...	161 5 0	500 12 3	2,802 1 0
12. Tawa Valley	...	...	...	...	...	93 2 0	178 7 3	1,361 7 0
Total for the Tahsil						3,732 1 0	7,414 12 1	38,879 9 0
								MULTAI
1. Multai-Khaloti	...	...	...	...	...	26 3 0	234 4 0	317 14 0
2. Masod-Pattan	...	...	...	...	...	1,059 2 0	2,827 7 5	7,901 0 0
3. Jawalkhera	...	...	...	...	...	974 7 0	1,920 0 0	5,258 13 0
4. Dahawa-Dunawa	...	...	...	...	...	554 5 0	1,691 8 9	6,504 9 0
5. Tawa Valley	...	...	...	...	...	4 15 0	10 0 0	551 11 0
6. Aonria-Bordehi	...	...	...	...	...	201 5 0	525 14 3	4,971 5 0
7. Chichanda	...	...	...	...	...	22 13 0	83 0 8	570 12 0
Total for the Tahsil						2,843 2 0	7,292 3 1	26,076 0 0
TOTAL FOR THE DISTRICT						6,575 3 0	14,706 15 2	64,955 9 0

for land held by Malguzars and Privileged Tenants.

AREA HELD BY PRIVILEGED TENANTS.		Total rental value (Columns 2, 4 and 5).	RENTAL VALUATION ADOPTED		Rate per acre of valuation adopted for Sir and Khudkasht.
Rental value at sanctioned rates.	Compare rents actually paid.		For Sir and Khudkasht.	For area held by Privileged Tenants.	
5	6	7	8	9	10
TAHSIL.					
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
713 15 0		13,790 13, 0	{ As sanctioned ... 12,367 2 0 As announced ... 12,631 3 0	709 14 0 709 14 0	1 9 3 1 9 10
324 0 0		3,799 5 0	{ As sanctioned ... 3,111 6 0 As announced ... 3,269 15 0	321 0 0 321 0 0	0 8 0 0 8 5
315 4 0		7,167 15 0	{ As sanctioned ... 6,309 2 0 As announced ... 6,903 12 8	484 4 0 484 4 0	0 10 2 0 11 2
79 13 0		521 7 0	{ As sanctioned ... 426 4 0 As announced ... 518 2 0	82 10 0 82 10 0	0 8 1 0 9 10
384 11 0		3,899 1 0	{ As sanctioned ... 3,446 5 0 As announced ... 3,916 10 0	323 12 0 323 12 0	0 6 8 0 7 7
104 0 0		588 6 0	{ As sanctioned ... 484 5 0 As announced ... 492 5 0	108 1 0 108 1 0	0 8 2 0 8 3
383 11 0		3,445 6 0	{ As sanctioned ... 3,033 12 0 As announced ... 3,252 7 0	352 10 0 352 10 0	0 12 6 0 13 5
347 10 0		5,795 15 0	{ As sanctioned ... 5,351 4 0 As announced ... 5,754 7 4	346 5 0 346 5 0	0 6 7 0 7 1
75 3 0		490 8 0	{ As sanctioned ... 410 12 0 As announced ... 433 0 0	76 2 0 76 2 0	0 9 2 0 9 4
282 3 0		1,815 5 0	{ As sanctioned ... 1,505 14 0 As announced ... 1,509 3 0	282 12 0 282 12 0	0 6 11 0 6 11
258 7 0		3,221 13 0	{ As sanctioned ... 2,792 12 0 As announced ... 2,916 3 0	250 8 0 250 8 0	0 10 11 0 11 4
185 13 0		1,640 6 0	{ As sanctioned ... 1,415 13 0 As announced ... 1,553 4 0	188 8 0 188 8 0	0 8 4 0 9 2
3,564 10 0		46,176 4 0	{ As sanctioned ... 40,654 11 0 As announced ... 43,150 8 0	3,526 6 0 3,526 6 0	0 10 6 0 11 2
AHSIL.					
80 14 0		424 15 0	{ As sanctioned ... 344 14 0 As announced ... 408 4 0	82 8 0 82 8 0	0 5 6 0 6 6
692 6 0		9,652 8 0	{ As sanctioned ... 8,832 0 0 As announced ... 9,676 11 9	692 8 0 692 8 0	0 13 11 0 15 3
630 15 0		6,864 3 0	{ As sanctioned ... 6,054 3 0 As announced ... 6,545 15 0	631 9 0 631 9 0	0 11 0 0 11 10
617 3 0		7,676 1 0	{ As sanctioned ... 6,600 10 0 As announced ... 7,281 10 2	613 6 0 613 6 0	0 7 5 0 8 1
46 5 0		602 15 0	{ As sanctioned ... 530 0 0 As announced ... 550 14 0	46 8 0 46 8 0	0 7 7 0 7 10
225 3 0		5,397 13 0	{ As sanctioned ... 4,345 2 0 As announced ... 4,615 1 0	195 12 0 195 12 0	0 7 0 0 7 6
120 7 0		714 0 0	{ As sanctioned ... 554 8 0 As announced ... 635 4 0	122 0 0 122 0 0	0 4 11 0 5 8
2,402 8 0		31,332 7 0	{ As sanctioned ... 27,360 5 0 As announced ... 29,713 11 11	2,384 3 0 2,384 3 0	0 9 4 0 10 1
5,071 11 0		77,508 11 0	{ As sanctioned ... 68,015 0 0 As announced ... 72,864 3 11	5,910 9 0 5,910 9 0	0 10 0 0 10 8

Table X.—Total assets on which

Assessment group.	Payments of malik- makbuzas as sanctioned.	Payments of tenants as sanctioned.	Annual value of sir, khudkasht and land held by privileged tenants.
1	2	3	4
BETUL			
	Rs. a. p.	Rs. a. p.	Rs. a. p.
1. Betul ... { As sanctioned	1,647 9 0	43,769 12 11	13,077 0 0
... { As announced	1,609 9 0	43,686 3 8	13,341 1 0
2. Dhaba ... { As sanctioned	563 12 0	21,329 5 5	3,432 6 0
... { As announced	563 12 0	21,437 4 8	3,590 15 0
3. Nasirabad ... { As sanctioned	82 4 0	35,972 6 11	6,793 6 0
... { As announced	82 4 0	35,157 10 2	7,388 0 8
4. Chandu ... { As sanctioned	2 0 0	5,569 11 0	508 14 0
... { As announced	2 0 0	5,392 2 6	600 12 0
5. Tapti ... { As sanctioned	92 8 0	23,523 2 8	3,770 1 0
... { As announced	92 8 0	22,964 7 8	4,240 6 0
6. Betul-Khaloti ... { As sanctioned	29 0 0	7,732 7 9	592 6 0
... { As announced	6 12 0	7,527 11 9	600 6 0
7. Bhensdehi ... { As sanctioned	306 4 0	15,679 12 0	3,386 6 0
... { As announced	262 4 0	14,804 15 0	3,605 1 0
8. Atner ... { As sanctioned	419 12 0	25,007 0 1	5,697 9 0
... { As announced	419 12 0	24,537 4 7	6,100 12 4
9. Bhawargarh ... { As sanctioned	...	6,959 0 6	486 14 0
... { As announced	...	6,997 1 0	509 2 0
10. Khamapur ... { As sanctioned	...	12,189 3 6	1,788 10 0
... { As announced	...	11,617 3 3	1,791 15 0
11. Chachundra ... { As sanctioned	91 8 0	14,563 3 1	3,043 4 0
... { As announced	91 8 0	14,437 8 9	3,166 11 0
12. Tawa Valley ... { As sanctioned	...	11,456 10 4	1,604 5 0
... { As announced	...	11,383 4 4	1,741 12 0
Total for the Tahsil ... { As sanctioned	3,234 9 0	2,23,751 12 2	44,181 1 0
... { As announced	3,130 5 0	2,19,942 13 4	46,676 14 0
MULTAI			
1. Multai-Khaloti ... { As sanctioned	44 0 0	6,232 5 10	427 6 0
... { As announced	44 0 0	6,047 0 1	490 12 0
2. Masod-Pattan ... { As sanctioned	2,655 15 0	56,551 15 7	9,524 8 0
... { As announced	2,655 15 0	55,921 13 3	10,369 3 9
3. Jawalkhera ... { As sanctioned	578 0 0	43,095 5 6	6,685 12 0
... { As announced	578 0 0	42,616 13 7	7,177 8 0
4. Dahawa Dunawa ... { As sanctioned	276 2 0	39,023 0 8	7,304 0 0
... { As announced	279 2 0	38,533 2 0	7,895 0 2
5. Tawa Valley ... { As sanctioned	...	3,637 9 0	585 8 0
... { As announced	...	3,698 7 0	597 6 0
6. Aonria Bordehi ... { As sanctioned	156 0 0	17,211 15 5	4,540 14 0
... { As announced	159 0 0	17,055 1 7	4,810 13 0
7. Chichanda ... { As sanctioned	...	7,911 15 5	676 8 0
... { As announced	...	7,724 0 6	757 4 0
Total for the Tahsil ... { As sanctioned	3,710 1 0	1,73,664 3 5	29,744 8 0
... { As announced	3,716 1 0	1,71,596 0 0	32,097 14 11
TOTAL FOR THE DISTRICT... { As sanctioned	6,944 10 0	3,97,415 15 7	73,925 9 0
... { As announced	6,846 6 0	3,91,539 3 4	78,774 12 11

Assessment based, i. e., as announced.

Siwai receipts.	Total.	COMPARE AT FORMER SETTLEMENT.			
		Cash rental.	Estimated value of sir, khudkasht and land held by privileged tenants.	Siwai receipts.	Total.
5	6	7	8	9	10
TAHSIL.					
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
354 8 0	58,848 13 11	{ 38,081 11 6	5,470 4 7	287 8 0	43,839 8 1
354 8 0	58,991 5 8	{			
6,700 0 0	32,025 7 5	{ 9,413 13 6	1,265 12 2	994 4 0	11,673 13 8
6,700 0 0	32,291 15 8	{			
4,895 8 0	47,743 8 11	{ 20,121 9 1	2,538 6 11	1,332 0 0	23,992 0 0
4,895 8 0	47,523 6 10	{			
1,592 0 0	7,672 9 0	{ 2,823 1 7	236 0 6	840 12 0	3,899 14 1
1,592 0 0	7,586 14 6	{			
1,516 8 0	28,902 3 8	{ 16,095 5 0	1,632 9 4	922 10 0	18,650 8 4
1,516 8 0	28,813 13 8	{			
1,316 0 0	9,669 13 9	{ 2,519 6 5	76 8 4	379 0 0	2,974 14 9
1,316 0 0	9,450 13 9	{			
1,040 8 0	20,401 14 0	{ 10,770 9 3	579 1 7	484 0 0	11,833 10 10
1,040 8 0	19,701 12 0	{			
1,141 0 0	32,265 5 1	{ 16,611 0 0	1,172 6 5	506 0 0	18,289 6 5
1,141 0 0	32,198 12 11	{			
1,888 0 0	9,333 14 6	{ 2,137 8 3	194 4 9	1,023 0 0	3,354 13 0
1,888 0 0	9,394 3 0	{			
2,798 8 0	16,776 5 6	{ 5,868 8 7	293 9 9	1,939 0 0	8,101 2 4
2,798 8 0	16,207 10 3	{			
837 0 0	18,534 15 1	{ 10,948 0 0	1,247 2 6	290 0 0	12,485 2 6
837 0 0	18,532 11 9	{			
1,116 0 0	14,176 15 4	{ 5,723 3 3	485 14 6	639 0 0	6,848 1 9
1,116 0 0	14,241 0 4	{			
25,184 8 0	2,96,351 14 2	{ 1,41,113 12 5	15,192 1 4	9,637 2 0	1,65,942 15 9
25,184 8 0	2,94,994 8 4	{			
AF SIL.					
2,006 0 0	8,709 11 10	{ 2,217 1 0	87 1 3	1,393 0 0	3,697 2 3
2,006 0 0	8,587 12 1	{			
653 0 0	69,385 6 7	{ 48,303 3 4	3,754 12 9	324 0 0	52,382 0 1
653 0 0	69,600 0 0	{			
111 8 0	50,470 9 6	{ 34,397 7 3	3,519 4 6	44 0 0	37,960 11 9
111 8 0	50,483 13 7	{			
443 0 0	47,046 2 8	{ 29,928 5 0	2,591 7 4	195 0 0	32,714 12 4
443 0 0	47,150 4 2	{			
720 0 0	4,943 1 0	{ 1,702 0 10	268 7 9	552 0 0	2,522 8 7
720 0 0	5,015 13 0	{			
1,849 0 0	23,757 13 5	{ 10,539 6 5	1,752 7 11	225 0 0	12,516 14 4
1,849 0 0	23,873 14 7	{			
983 0 0	9,571 7 5	{ 3,768 12 0	147 10 1	349 0 0	4,205 6 1
983 0 0	9,404 4 6	{			
6,765 8 0	2,13,884 4 5	{ 1,30,796 3 10	12,121 3 7	3,082 0 0	1,45,999 7 5
6,765 8 0	2,14,175 13 11	{			
31,950 0 0	5,10,236 2 7	{ 2,71,910 0 3	27,313 4 11	12,719 2 0	3,11,942 7 2
31,950 0 0	5,09,110 6 3	{			

TABLE XI.—Revised Assessment as sanctioned as well as announced.

Assessment Group.	Existing revenue.	Revised revenue sanctioned.	Percent- age of present revenue on total estimated income of former Settle- ment.	Percent- age of sanctioned revenue on total estimated enhanced income.	ANALYSIS OF INCOME ON WHICH ASSESSMENT BASED.			
					Present cash receipts including Siwai and pay- ments by tenants of Sir.	RESULTING FROM VALUATION.		
						Rental valuation of Sir and Khud- kasht, excluding actual cash receipts.	Rental value of land held by Privi- leged tenants, excluding cash receipts.	Rent enhancements effected.
1	2	3	4	5	6	7	8	9
BETUL TAHSIL.								
	Rs. a. p.	Rs. a. p.			Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
BETUL { As sanctioned.	26,679 10 5	34,265 0 0	60.8	58.5	41,719 14 1	10,309 7 0	709 14 0	6,109 10 10
BETUL { As announced.	...	34,205 0 0	60.8	58.0	41,719 14 1	10,573 8 0	709 14 0	5,988 1 7
DHABA { As sanctioned.	6,102 13 7	15,645 0 0	52.2	48.8	26,355 12 1	2,791 0 0	321 0 0	2,557 11 4
DHABA { As announced.	...	15,770 0 0	52.2	48.8	26,355 12 1	2,949 9 0	321 0 0	2,665 10 7
NABIR- ABAD { As sanctioned.	16,609 0 0	52,240 0 0	69.2	52.8	36,939 6 6	5,673 4 0	484 4 0	546 10 5
NABIR- ABAD { As announced.	...	25,220 0 0	69.2	53.0	36,939 6 6	6,267 14 8	484 4 0	13 8
HAN- DU { As sanctioned.	1,810 0 0	3,775 0 0	46.4	49.2	6,502 4 0	426 4 0	82 10 0	661 7 0
HAN- DU { As announced.	...	3,765 0 0	46.4	49.6	6,502 4 0	518 2 0	82 10 0	483 14 6
TAPTI { As sanctioned.	11,345 2 8	15,575 0 0	60.8	53.8	23,543 5 8	2,210 7 0	323 12 0	2,824 11 0
TAPTI { As announced.	...	15,575 0 0	60.8	54.0	23,543 5 8	2,680 12 0	323 12 0	2,266 0 0
BETUL- IALOTI { As sanctioned.	1,567 8 0	4,675 0 0	52.6	48.3	8,436 0 0	386 12 0	108 1 0	739 0 9
BETUL- IALOTI { As announced.	...	4,675 0 0	52.6	49.4	8,436 0 0	394 12 0	108 1 0	512 9 9
BHENS- DEHI { As sanctioned.	7,941 0 0	10,915 0 0	67.1	53.5	14,978 2 7	2,615 15 0	352 10 0	2,455 2 5
BHENS- DEHI { As announced.	...	10,840 0 0	67.1	55.0	14,978 2 7	2,834 10 0	352 10 0	1,536 5 5
ATNER { As sanctioned.	11,478 12 0	17,130 0 0	62.7	53.9	23,976 3 9	3,641 14 0	346 2 0	4,300 14 4
ATNER { As announced.	...	17,130 0 0	62.7	53.1	23,976 3 9	4,045 1 4	346 5 0	3,831 2 10
BHA- ARGARH { As sanctioned.	1,478 0 0	4,185 0 0	44.0	44.8	8,298 9 0	350 5 0	76 2 0	608 14 6
BHA- ARGARH { As announced.	...	4,195 0 0	44.0	44.7	8,298 9 0	372 9 0	76 2 0	606 15 0
O. KHA- MAPUR { As sanctioned.	3,703 0 0	7,855 0 0	45.7	46.8	13,781 8 5	1,305 5 5	282 12 0	1,406 11 8
O. KHA- MAPUR { As announced.	...	7,790 0 0	45.7	48.0	13,781 8 5	1,308 10 5	282 12 0	834 11 5
11. CHA- HUNDRA { As sanctioned.	7,035 6 10	10,175 0 0	56.3	54.8	13,454 1 11	2,291 15 9	250 8 0	2,538 5 5
11. CHA- HUNDRA { As announced.	...	6,165 0 0	56.3	54.8	13,454 1 11	2,415 6 9	250 8 0	2,412 11 1
12. TAWA VALLEY { As sanctioned.	3,805 13 8	6,885 0 0	55.5	48.5	11,086 12 6	1,237 5 9	188 8 0	1,664 5 1
12. TAWA VALLEY { As announced.	...	6,900 0 0	55.5	48.4	11,086 12 6	1,374 12 9	188 8 0	1,519 15 1
TOTAL OF THE TAHSIL. { As sanctioned.	99,556 3 2	1,56,320 0 0	59.9	52.7	2,29,072 0 6	33,239 14 11	3,526 6 0	30,513 8 9
TOTAL OF THE TAHSIL. { As announced.	...	1,56,230 0 0	59.9	52.9	2,29,072 0 6	35,735 11 11	3,526 6 0	26,600 5 11

TABLE XI.—Revised Assessment as sanctioned as well as announced.—(Concl'd.)

Assessment Group.	Existing revenue.	Revised revenue sanctioned.	Percentage of present revenue on total estimated income of former Settlement.	Percentage of sanctioned revenue on total estimated enhanced income.	ANALYSIS OF INCOME ON WHICH ASSESSMENT BASED.				
					Present cash receipts including siwai and payments by tenants of Sir.	RESULTING FROM VALUATION.			
						Rental valuation of Sir and Khudkasht, excluding actual cash receipts.	Rental value of land held by privileged tenants, excluding cash receipts.	Rent enhancements effected.	
1	2	3	4	5	6	7	8	9	
MULTAI TAHSIL.									
	Rs. a. p.	Rs. a. p.			Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
MUL - TAI - KHAL - OTI.	As sanctioned.	1,541 8 0	3,965 0 0	41'6	45'5	7,753 0 5	110 10 0	82 8 0	763 9 5
	As announced.	...	3,965 0 0	41'6	46'1	7,753 0 5	174 0 0	82 8 0	578 3 8
MASOD - PATTAN.	As sanctioned.	33,003 0 10	41,250 0 0	63'0	59'4	52,010 11 3	6,004 8 7	692 8 0	10,677 10 9
	As announced.	...	41,285 0 0	63'0	59'3	52,010 11 3	6,849 4 4	692 8 0	10,047 7 8
JAWAL - KHEERA.	As sanctioned.	24,936 15 4	29,510 0 0	65'6	58'4	38,999 1 0	4,134 3 0	631 9 0	6,705 12 6
	As announced.	...	29,460 0 0	65'6	58'3	38,999 1 0	4,625 15 0	631 9 0	6,227 4 7
DAHAWA - DUNAWA.	As sanctioned.	21,569 2 6	27,020 0 0	65'9	57'4	34,937 14 8	4,999 1 3	613 6 0	6,495 12 9
	As announced.	...	27,015 0 0	65'9	57'2	34,937 14 8	5,590 1 5	613 6 0	6,008 14
TAWA - ALLEY.	As sanctioned.	1,207 0 0	2,355 0 0	47'8	47'6	3,744 4 0	529 0 0	46 8 0	623 5
	As announced.	...	2,365 0 0	47'8	47'1	3,744 4 0	540 14 0	46 8 0	684 3 0
ONRIA - RDEHI.	As sanctioned.	7,448 0 0	11,930 0 0	59'5	50'2	17,129 13 9	3,819 3 9	195 12 0	2,612 15 1
	As announced.	...	11,930 0 0	59'5	49'9	17,129 13 9	4,089 2 9	195 12 0	2,459 2 1
CHI - ANDA.	As sanctioned.	1,898 13 7	4,620 0 0	45'1	48'2	8,011 12 7	471 7 4	122 0 0	966 3 6
	As announced.	...	4,620 0 0	45'1	48'8	8,011 12 7	552 3 4	122 0 0	778 4 7
Total of the Tahsil.	As sanctioned.	91,604 8 3	1,20,650 0 0	62'7	56'4	1,62,586 9 8	20,068 1 11	2,384 3 0	28,845 5 10
	As announced.	...	1,20,640 0 0	62'7	56'3	1,62,586 9 8	22,421 8 10	2,384 3 0	26,783 7 8
TOTAL OF THE TRICT.	As sanctioned.	1,91,160 11 5	2,76,970 0 0	61'2	54'2	3,91,658 10 2	53,308 0 10	5,918 9 0	59,358 14 7
	As announced.	...	2,76,870 0 0	61'2	54'3	3,91,658 10 2	58,157 4 9	5,910 9 0	53,383 13 7

TABLE XII.—Assessment comparison.

Assessment Group.	Actual Increase (+) or Decrease (-) of sanc- tioned on present revenue.	COMPARE INCREASE (+) OR DECREASE (-)				Increase (+) or Decrease (-) per cent. of sanc- tioned revenue over present revenue.	COMPARE (INCREASE (+) OR DECREASE (-) PER CENT. IN—		INCIDENCE PER ACRE IN CULTIVATION.	
		In proposed cash rental.	In valuation of Sir, Khud- kasht and Privileged land.	In Siwai income.	Net increase or decrease.		Area in cul- tivation.	Esti- mated in- come.	Pre- sent revenue on area of former Settle- ment.	Sanc- tioned revenue on pre- sent area.
I	2	3	4	5	6	7	8	9	10	11
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a.	Rs. a. p.				A. p.	A
BETUL TAHSIL.										
1. Betul ...	{ As sanctioned...	7,585 5 7	7,335 10 5	7,606 11 5	67 0	15,009 5 10	28.2	3.3	34.2 34.6	11 0 13
	{ As announced...	7,525 5 7	7,214 1 2	7,870 12 5	67 0	15,151 13 7				
2. Dhaba ...	{ As sanctioned...	9,542 2 5	12,479 3 11	2,166 9 10	5,705 12	20,351 9 9	158.4	67.7	174.3 176.6	2 9 4
	{ As announced...	9,667 2 5	12,587 3 2	2,325 2 10	5,705 12	20,618 2 0				
3. Nasirabad ...	{ As sanctioned ...	8,631 0 0	15,933 1 10	4,254 15 1	3,563 8	23,751 8 11	51.8	39.8	98.9 98.0	4 10 5
	{ As announced...	8,611 0 0	15,118 5 1	4,849 9 9	3,563 8	23,531 6 10				
4. Chandu ...	{ As sanctioned...	1,965 0 0	2,748 9 5	272 13 6	751 4	3,772 10 11	108.0	63.9	96.9 94.5	2 10 3
	{ As announced...	1,955 0 0	2,571 0 11	364 11 6	751 4	3,687 0 5				
5. Tapti ...	{ As sanctioned .	4,229 13 4	7,520 5 8	2,137 7 8	593 14	10,251 11 4	37.2	16.9	54.9 54.4	3 1 3
	{ As announced...	4,222 13 4	6,961 10 8	2,607 12 8	593 14	10,163 5 4				
Betu'-Khalo- ti.	{ As sanctioned...	3,107 8 0	5,242 1 4	515 13 8	937 0	6,694 15 0	198.2	82.3	225.0 217.6	2 6 4
	{ As announced...	3,107 8 0	5,015 1 4	533 13 8	937 0	6,475 15 0				
Bhensdehi ...	{ As sanctioned...	2,974 0 0	5,215 6 9	2,807 4 5	545 8	8,568 3 2	36.5	23.1	72.4 66.4	3 10 4
	{ As announced...	2,899 0 0	4,296 9 9	3,025 15 5	545 8	7,868 1 2				
8. Atner ...	{ As sanctioned...	5,651 4 0	8,815 12 1	4,525 2 7	635 0	13,975 14 8	49.2	23.4	76.4 76.0	3 0 3
	{ As announced...	5,651 4 0	8,346 0 7	4,928 5 11	635 0	13,909 6 6				
9. Bhawargarh...	{ As sanctioned...	2,707 0 0	4,821 8 3	292 9 3	865 0	5,979 1 6	184.0	132.0	178.2 179.4	2 8
	{ As announced...	2,717 0 0	4,859 8 9	314 13 3	865 0	6,039 6 0				
10. Khamapur...	{ As sanctioned...	4,152 0 0	6,320 10 11	1,495 0 3	859 8	8,675 3 2	110.3	47.5	107.0 100.0	2 6
	{ As announced...	4,087 0 0	5,748 10 8	1,498 5 3	859 8	8,106 7 11				
11. Chachundra.	{ As sanctioned...	3,139 9 2	3,706 11 1	1,796 1 6	547 0	6,049 12 6	44.4	12.9	48.4 48.4	4 6
	{ As announced...	3,129 9 2	3,581 0 9	1,919 8 6	547 0	6,047 9 3				
12. Tawa Valley.	{ As sanctioned...	3,079 2 4	5,733 7 1	1,118 6 6	477 0	7,328 13 7	81.2	57.4	107.0 107.9	2 11
	{ As announced...	3,094 2 4	5,660 1 1	1,255 13 6	477 0	7,392 14 7				
Total for the Tah- sil.	As sanctioned...	56,763 12 10	85,872 8 9	28,988 15 8	15,547 6	1,30,408 14 5	56.9	34.4	78.5	4 2
	(As announced...	56,673 12 10	81,959 5 11	31,484 12 8	15,547 6	1,28,991 8 7	56.8	34.4	77.8	4 2

TABLE XII.—Assessment comparison.—(Concl'd.)

Assessment Group.	Actual Increase (+) or Decrease (—) of sanctioned on present revenue.	COMPARE INCREASE (+) OR DECREASE (—).				Increase (+) or Decrease (—) per cent. of sanctioned revenue over present revenue.	COMPARE INCREASE (+) OR DECREASE (—) PER CENT. IN—		INCIDENCE PER AREA IN CULTIVATION.	
		In proposed cash rental.	In valuation of Sir, Khudkasht and Privileged land.	In Siwai income.	Net increase or decrease.		Area in cultivation.	Estimated income.	Present revenue on area of former Settlement.	Sanctioned revenue on present area.
1	2	3	4	5	6	7	8	9	10	11
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.				A. p.	A. p.
MULTAI TAHSIL.										
Multai-Khaloti.	As sanctioned.	2,428 8 0	4,059 4 10	340 4 9	613 0	5,012 9 7	157.2	69.4	135.5	1 9 2 8
	As announced.	2,423 8 0	3,873 15 1	403 10 9	613 0	4,890 9 10	...	...	132.3	...
asod-Pattan...	As sanctioned.	8,246 15 2	10,904 11 3	5,769 11 3	329 0	17,003 6 6	25.1	1.3	32.4	7 3 9 1
	As announced.	8,281 15 2	10,274 8 11	6,614 7 0	329 0	17,217 15 11	...	...	32.8	...
walkhera ...	As sanctioned.	4,573 0 8	9,275 14 3	3,166 7 6	67 8	12,509 13 9	18.0	—9.4	32.1	5 1 6 8
	As announced.	4,523 0 8	8,797 6 4	3,658 3 6	67 8	12,523 1 10	...	...	32.9	...
ahawa-Duna-	As sanctioned.	5,450 13 6	9,370 13 8	4,712 8 8	248 0	14,331 6 4	25.2	5.0	43.8	3 11 4 9
	As announced.	5,445 13 6	8,883 15 0	5,303 8 10	248 0	14,435 7 10	...	...	44.1	...
awa Valley.	As sanctioned.	1,148 0 0	1,935 8 2	317 0 3	168 0	2,420 8 5	95.1	48.5	95.9	2 8 3 6
	As announced.	1,158 0 0	1,996 6 2	328 14 3	168 0	2,493 4 5	95.9	...	98.8	...
aria-Bordehi	As sanctioned.	4,482 0 0	6,828 9 0	2,788 6 1	1,624 0	11,240 15 1	60.1	55.9	89.8	3 11 4 0
	As announced.	4,482 0 0	6,674 11 2	3,058 5 1	1,624 0	11,357 0 3	...	...	90.7	...
chanda ...	As sanctioned.	2,721 2 5	4,203 3 5	528 13 11	634 0	5,366 1 4	143.3	3.5	127.6	0 10 2 1
	As announced.	2,721 2 5	4,015 4 6	609 9 11	634 0	5,258 14 5	...	...	125.0	...
the Tah-	As sanctioned.	29,045 7 9	46,578 0 7	17,623 4 5	3,683 8	67,884 13 0	31.7	9.1	46.4	4 6 5 6
	As announced.	29,035 7 9	44,516 3 2	19,976 11 4	3,683 8	68,176 6 6	32.7	9.1	46.7	4 6 5 6
As sanctioned.		85,809 4 7	1,32,450 9 4	46,612 4 1	19,230 14	1,98,293 11 5	44.8	22.7	63.5	4 4 5 2
As announced.		85,709 4 7	1,26,475 9 1	51,461 8 0	19,230 14	1,97,167 15 1	44.8	22.7	63.2	4 4 5 2

TABLE XIII.—*Net revenue increment for regularly settled areas.*

Assessment Group.	PRIOR TO REVIS			AS REVISED.			
	Kamil-jama.	Jama not realizable owing to assignment	Net revenue realizable.	Kamil-jama sanctioned by Chief Commissioner.	Jama not realizable owing to assignment.	Net revenue realizable.	Actual increase of revised or realizable jama over previous jama.
1	2	3	4	5	6	7	8
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a.
BETUL TAHSIL.							
1. Betul	26,679 10 5	250 13 10	26,428 12 7	34,205 0 0	372 0 0	33,833 0 0	7,404 3
2. Dhaba	6,102 13 7	3 0 0	6,099 13 7	15,770 0 0	1 12 0	15,768 4 0	9,668 6
3. Nasirabad	16,609 0 0	37 0 0	16,572 0 0	25,220 0 0	18 12 0	25,201 4 0	8,629 4
4. Chandu	1,810 0 0	Nil.	1,810 0 0	3,765 0 0	Nil.	3,765 0 0	1,955 0
5. Tapti	11,345 2 8	14 8 0	11,330 10 8	15,575 0 0	13 0 0	15,562 0 0	4,231 5
6. Betul-Khaloti	1,567 8 0	Nil.	1,567 8 0	4,675 0 0	Nil.	4,675 0 0	3,107 8
7. Bhensdehi	7,941 0 0	104 0 0	7,837 0 0	10,840 0 0	172 8 0	10,667 8 0	2,830 8
8. Atner	11,478 12 0	66 12 0	11,412 0 0	17,130 0 0	90 6 0	17,039 10 0	5,627 10
9. Bhawargarh	1,478 0 0	120 10 0	1,357 6 0	4,195 0 0	150 0 0	4,045 0 0	2,687 10
10. Khamapur	3,703 0 0	Nil.	3,703 0 0	7,790 0 0	Nil.	7,790 0 0	4,087 0
11. Chhachundra	7,035 6 10	18 0 0	7,017 6 10	10,165 0 0	11 0 0	10,154 0 0	3,136 9
12. Tawa Valley	3,805 13 8	57 6 0	3,748 7 8	6,900 0 0	240 0 0	6,660 0 0	2,911 8
Total for the Tahsil	99,556 3 2	672 1 10	98,884 1 4	1,56,230 0 0	1,069 6 0	1,55,160 10 0	56,276 8
MULTAI TAHSIL.							
1. Multai-Khaloti	1,541 8 0	1 8 0	1,540 0 0	3,965 0 0	2 0 0	3,963 0 0	2,423 0
2. Masod-Pattan	33,003 0 10	461 4 0	32,541 12 10	41,285 0 0	472 9 4	40,812 6 8	8,270 5
3. Jawalkhera	24,936 15 4	108 0 0	24,828 15 4	29,460 0 0	39 0 0	29,421 0 0	4,592 0
4. Dahawa-Dunawa	21,569 2 6	49 8 0	21,519 10 6	27,015 0 0	132 13 9	26,882 2 3	5,362 7
5. Tawa Valley	1,207 0 0	60 0 0	1,147 0 0	2,365 0 0	95 0 0	2,270 0 0	1,123 0
6. Aonzia-Bordehi	7,448 0 0	30 8 0	7,417 8 0	11,930 0 0	43 12 0	11,886 4 0	4,468
7. Chichanda	1,898 13 7	Nil.	1,898 13 7	4,620 0 0	Nil.	4,620 0 0	2,721
Total for the Tahsil	61,604 8 3	710 12 0	60,893 12 3	1,20,640 0 0	785 3 1	1,19,854 12 11	
TOTAL FOR THE DISTRICT.	1,61,160 11 5	1,382 13 10	1,59,777 13 7	2,76,870 0 0	1,854 9 1	2,75,015 6 11	

TABLE XIV.—FORM OF WAJIB-UL-ARZ FOR THE BETUL DISTRICT.

Heads.	Details of Rules and Customs.
I.—Extent to which co-sharers are represented by Lambardars.	The person appointed lambardar shall attend the courts when there is business of the village to be done there, and shall be responsible for the collection of rents, the payment of the Government demand, and the leasing of land not reserved for village nistar.
II.—Relations between the Malguzars and Tenants.	(a) In regard to such matters as rent collection, rent enhancement and ejectment and in their dealings with their tenants, generally, the proprietors will abide by the provisions of the Tenancy Act, and the rules made under it, and will not levy cesses over and above the rent, save such as are warranted by law; where rent has been fixed in money, rent in kind should not be recovered. (b) The malguzars provide for the customary village expenses whatever they may be.
III.—Appointment of Lambardars.	When a lambardar dies the person whom the co-sharers choose, shall, subject to the approval of the revenue authorities, succeed to his post. In cases when the co-sharers are unable to agree as to the person to be appointed lambardar, he shall be appointed by the Deputy Commissioner after such enquiry into the circumstances of the case as that officer may think necessary. If the sharers are displeased with their lambardar, on account of his absence from the village or misconduct, or any other defect which prejudices the administration of the village, they can apply to the Deputy Commissioner for his removal.
IV.—Appointment and remuneration of Village Watchmen.	(Number of watchmen to be stated and their names and the details of any rent-free service land held, to be followed by details of fees from malguzars and tenants fixed in accordance with the principals prescribed for the district.)
V.—Remuneration of Patwaris.	(Give details of rent-free land, fees payable by malguzars and tenants, and customary presents, if any.)
VI.—Other Village servants.	The dues paid to village servants are at present :— to blacksmith, to carpenter, to barber, &c. No mention of Bhumka or Garpagari to be made.
VII.—Details of land held revenue-free as against the Malguzar.	(Serial number of holding, area and revenue assessed to be stated, with name of present holder and right in which he holds, whether as malik-makbuza or sharer.)
VIII.—Details of land other than service land held free of rent or at privileged rent, with particulars of condition.	(Serial number of holding, area and rent to be stated with name of present holder, condition on which or terms for which he holds, and details of rent, if any, to be paid by him.)
IX.—Management of the village Forest Waste and Grazing-grounds.	The waste land of the village and its produce are the malguzar's property. He will allow all the agriculturists residing in the village to exercise the following rights, free of charge of any sort, to graze their agricultural cattle, to cut grass for thatching, and creepers, palas roots, leaves and fire-wood for private use, including the manufacture of gur, expressed from cane grown in <i>santa-baris</i> in the village, and to cut poles and bamboos for agricultural implements, and also for house construction and repair: provided that the exercise of this latter right to building timber is also that of taking

Heads,	Details of Rules and Customs.
IX.—Management of the village Forest, Waste and Grazing-grounds.— (Concld).	firewood for gur manufacture can only be exercised with the permission of the Deputy Commissioner, and when warranted by custom and the extent and condition of the village forest. Any lambardar who wishes to reserve part of the village waste as a fuel or fodder reserve may, with the previous approval of the Deputy Commissioner, reserve a specified part subject to such conditions as may be prescribed by the Deputy Commissioner. [Here will follow details of rights of tenants to mahua, achar or other jungle fruits including rights of gleaning fruits. Other peculiar rights enjoyed by the tenants over the waste. If the village adjoins Government forest a clause will follow under which the malguzars will engage to do their share in maintaining the forest boundary, by annually clearing a line to the width of 20 feet on their side of the boundary line.] If the village waste lands have been apportioned between malguzars and Ryots by agreement ratified before the Deputy Commissioner or Settlement Officer, the terms of such agreements shall, except it be modified by general consent (such modification being again ratified by the Deputy Commissioner) be observed by both parties during the period of settlement. In respect to forest trees within the village limits, the malguzars will always observe the rules which may be issued from time to time, by or under authority of the Chief Commissioner, regarding the use and preservation of malguzari forests.
X.—The Village site.	Persons cultivating land in the village are entitled to a house-site free of rent, but it will be in the option of the malguzars to take rent for the gardens attached to houses. The village cultivators may enlarge their houses and cattle-sheds within their enclosures, and may build new ones on vacant sites with the permission of the malguzars. Existing rights over houses and house-sites shall be maintained, but non-agriculturists who build houses in future, shall do so on such terms as they may agree upon with the malguzar. House materials are the property of the person who builds the house, and may be sold by him: provided that the malguzar may claim in any case of such transfer any materials which were obtained free of charge from the village waste, and no sale or mortgage of materials thus obtained will be valid against the malguzar. The sites of houses shall devolve according to custom. In the absence of any special agreement to the contrary, house-sites held by cultivators are not transferable by sale, save under the conditions applying to the transfer of the holdings to which they are attached. Should any house be relinquished, the site shall revert to the malguzar in the absence of special agreement to the contrary. The malguzars will preserve for their prescribed use any numbers set apart as standing ground for cattle, threshing-floor, burial-ground and the like. The burning ground is in No. The cattle stand in No. and the site for threshing floors in No. Part of No. is used for purposes of nature. The malguzar will not cultivate these nor let them out to a tenant nor allow them to be encroached upon.
XI.—Village Roads, Paths and Riglots & way.	The existing paths and roads shall remain open, and the malguzar and the ryots shall repair them annually. The malguzar will allow no one to encroach on them by building, enclosing, or cultivating, and will keep the road broad enough for the easy passage of carts. Should any one of the ryots pay no

Heads.	Details of Rules and Customs.
XI.—Village Roads, Paths and Rights-of-way.—(<i>Concl'd</i>).	attention to the malguzar's warnings, the malguzar will report the case to the Deputy Commissioner of the district. The malguzar will not permit such cultivation of any part of existing cattle tracks to impede the passage of cattle.
XII.—Planting and Cutting of trees.	Groves now existing shall remain the property of their present possessors, but the malguzar shall be the proprietor of such groves should their owners relinquish the land on which they stand, or be ejected from it for arrears, or die without heirs: provided that trees planted on abandoned malik-makbuza plots escheat to Government along with the land on which they stand.
	When land is transferred, the right to the trees on the land shall pass with it. Malik-makbuza, absolute-occupancy tenants, and occupancy tenants may plant groves on their land, and residents of the village may plant trees in their enclosures. With these exceptions, persons can only plant trees with the consent of the malguzar. Trees of spontaneous growth within holdings belong to the malguzars, but they will give permission to the cultivator in possession of the holding to cut the wood for the benefit of the holding or in the exercise of the right of nistar without charge.
	Fruit-bearing trees within holdings may not be cut, <i>viz.</i> , mango, mahua, achar, jamuns, harra, and bahera, and the fruit-bearing tendu without the permission of the Deputy Commissioner.
XIII.—Manure and Sweepings.	Manure found on lands in possession of any cultivators shall be his property. Manure found on the roads, village waste, or gowthan may be appropriated by any person. As to non-cultivators, any manure they may store in their own compounds belong to them, but all manure and sweepings thrown elsewhere belongs to the malguzars.
XIV.—Disposal of Hides and Carcasses of cattle.	The carcasses of cattle which die in the village are appropriated by the kotwar, who takes their hides without payment, and in consideration thereof is bound to see that the carcasses are disposed off in such a way that they may not be a source of danger to health. In cases where the Deputy Commissioner has reason to suspect that cattle are being poisoned for the sake of their hides, and that cattle disease is being spread by the sale and transport of the hides, he may direct that all carcasses be buried or destroyed without the hides being removed. The hides of cattle which die in the village are the property of the owners, who may dispose of them as they please: provided that they make proper arrangements for the disposal of the carcasses after the hides have been removed: provided also that, if the Deputy Commissioner has reason to suppose that cattle disease is being spread by the sale and transport of hides, he may direct that all carcasses be buried or destroyed without the hides being removed.
XV.—Protected Thekaddars.	[To be left blank except in those cases where the Thekadar has been granted protected status under Section 65-A of the Central Provinces Land Revenue Act. The incidents of the protected status will be those given in Article 276 of the Settlement Code.]
XVI.—Miscellaneous.	[To include any important matters not dealt with above, <i>e. g.</i> , in bazar villages a clause against the levy of bazar dues by the malguzar. A clause detailing easements possessed by the village over another village or by another village over it.]

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FROM

F. G. SLY, ESQ., I. C. S.,

COMMISSIONER OF SETTLEMENTS AND AGRICULTURE,

Central Provinces,

TO

THE CHIEF SECRETARY TO THE HON'BLE THE CHIEF
COMMISSIONER,

REVENUE DEPARTMENT,

Central Provinces.

Nagpur, the 7th April 1902.

SIR,

I have the honour to submit the Final Report on the revision of the Land Revenue Settlement of the Betul District, which was effected during the years 1894 to 1899.

2. The district covers an area of 3,801 square miles, of which 2,529 square miles are held in ordinary proprietary tenure and 1,077 square miles are Government forests, the small balance of 195 square miles having been excised from the latter for settlement upon ryotwari principles. With the exception of a few villages on the southern border, the whole district lies on the Satpura plateau at a mean elevation of 2,000 feet above the sea level, while the Khamla plateau in the south-west rises to nearly 4,000 feet. The Settlement Officer describes the three main divisions of the district—First, there is the sandstone country in the north largely covered with forest-clad hills and containing for the most part poor sandy soil in the valleys which is pretty fully cultivated; the lesser millets are largely grown, but gram and some wheat are raised in the richer patches of soil. Next, comes the central trap plateau of very unequal value, containing much black soil suitable for wheat cultivation together with a large extent of stony land upon which juar, oilseeds and the lesser millets are grown. Finally, there is a belt of hilly trap country surrounding the east, south and west borders of the central plateau, which consists for the most part of precipitous flat-topped hills divided by narrow valleys, the ravine-cut lands being sparsely cultivated with the lesser millets, and the better patches with juar and cotton. Taking the district as a whole, 63 per cent. of the malguzari area is occupied, 53 per cent. is under cultivation, and 38 per cent. is cropped. Wheat is the largest crop, covering as a rule 26 per cent. of the cropped area, whilst the lesser millets—juar and jagni—rank next in order of importance. Gram and other pulses are grown to a considerable extent as mixtures and in rotation with wheat. Finally, sugarcane, though grown in only 8,000 acres, covers a larger area than in any other district of the provinces, and is of much commercial value. The central plateau is blessed with an excellent water-supply generally at a small depth; but it is not much used for irrigation, some 10,500 acres only being irrigated in the whole district.

3. As is to be expected in a district with so much hilly country, the population largely consists of aboriginal Gonds and Korkus; but Kunbis and Bhoirs are the principal cultivators in the richer villages. The census of 1891 gave a total population of 323,196, being an increase of 6 per cent. upon the figures of the preceding census. The district is badly supplied with communications, lying as it does at a distance from both the railway systems which serve the provinces. The only metalled road was that which runs right across the district, giving communication with Nagpur on the south and Itarsi on the north. This is now supplemented by a second road from the head-quarters through the western portion of the district to Harda. No statistics of trade have been recorded; but a good deal of wheat is exported to Itarsi, whilst sugar and cotton finds its way to the Berars. Timber and other forest products, such as myrabolams, mahua, &c., are also exported. The communications, though still poor, are much better than formerly, so that there has been a large rise in prices. The statistics collected show that in towns the price of wheat has risen 69 per cent. since the quinquennial period during which the previous settlement was effected, whilst enquiries from cultivators show that the rise has been about 139 per cent. in the villages. Jagni and kodon have similarly risen 152 and 139 per cent., respectively.

4. In estimating the agricultural progress of the district since the settlement of 1864, it is necessary to take the normal years preceding the famines, and for this purpose the Settlement Officer has taken the average of four years 1891-92 to 1894-95. He shows that during this period the area in occupation had increased 33 per cent., and the area in cultivation (including current fallows) 38 per cent. In spite of this large expansion of cultivation the cropped area is only 5 per cent. larger than that recorded at the previous settlement. The Settlement Officer gives good reasons for doubting the correctness of the crop statistics of the settlement of 1864; the maps and records were notoriously incorrect, and it seems that waste land included in holdings was then recorded as cropped, to save the trouble of surveying it separately. There had thus been a large expansion of cultivation; but how far this is effective cultivation is obscured by the inaccuracy of the former record.

5. The area held by tenants had increased from 709,839 to 898,817 acres, whilst their payments had risen from Rs. 2,68,187 to Rs. 3,40,598, the rate per acre having remained stationary at 6 annas. Even making a liberal allowance for the extension of cultivation to poorer soils, the rise in prices justifies a much larger enhancement than that of 16·7 per cent. made by the Settlement Officer. Moreover, the protected classes were paying much lower rates than the ordinary tenants, whose payments had been more fully enhanced by the proprietors. Even after the Settlement Officer's enhancement, the protected classes pay considerably less than the ordinary tenants before revision, if allowance is made for the quality of the soil held by each class.

6. The home-farms of the proprietors covered an area of 108,580 acres, which is an increase of 47,145 acres since the former settlement, being somewhat above the average owing to relinquishments of tenant land in the first famine. This assumption area was valued almost without exception at the unit-rates taken for tenants' land, so that the lenient treatment of tenants was extended to malguzars. The acreage rate is 10 annas, which is equal to that fixed for absolute-occupancy tenants; but is 3 annas an acre in excess of the all-round tenant rate owing to the superiority of the soil of the home-farms. The rate may be compared with that of Re. 1-9-1 obtained by proprietors upon 9,352 acres leased out by them. The estimate of siwai income, which amounts to Rs. 31,950, has also been most moderately made after local enquiry in each village, a drawback being given on account of the fluctuating nature of the income.

7. The actual percentage of assets taken at the settlement of 1864 is difficult to determine owing to the inaccurate valuation of the assumption area and the absence of any valuation of siwai receipts; but the Settlement Officer estimates that 60 per cent. was actually taken. Since that settlement the malguzars had

increased their income from rents by Rs. 73,092, and to this amount Rs. 59,359 has been added by revision. Similarly, the home-farms had been extended over an additional area with a rental value of about Rs. 29,465. Thus the total improvement in the rental value of their estates is Rs. 1,61,916, whilst there is no doubt that the miscellaneous receipts have also largely increased. The land revenue has now been increased from Rs. 1,91,161 to Rs. 2,76,870, or by 45 per cent. This absorbs 54 per cent. of the revised assets; 56 per cent. being taken in the Multai Tahsil, but only 53 per cent. in the Betul Tahsil, owing to the smaller size of the villages and the larger amount of siwai income in the latter tahsil. Towards this increase of revenue, Rs. 59,359 is contributed by enhancement of rents. It absorbs only 53 per cent. of the increased rental value of the district since the settlement of 1864. The incidence per acre in cultivation is raised from 4 annas 4 pies at last settlement to 5 annas 2 pies upon revision. In spite of the large actual increase, it is thus clear that the revised revenue has been moderately assessed. In villages where the increase in the revised revenue would result in a large diminution of the proprietor's profits, progressive settlements have been allowed, relief of this nature being given in 182 villages to the amount of Rs. 16,510.

8. The revision of the settlement was in progress in the year of the first famine, 1896-97; but since it was completed the district has been visited by a still more disastrous famine in 1899-1900, the severity of which is shown by the fact that the population decreased from 323,196 to 285,363 persons, or by nearly 12 per cent. The effect of these famines upon the cultivation of the district is shown in the following figures:—

Year.			Cropped area.	Cultivated area.	Outturn (taking 100 as a normal crop on a normal area).
			Acres.	Acres.	
Average, 1891-95	...	...	658,176	951,931	75
" 1897-98	...	...	528,949	891,717	83
" 1898-99	...	...	568,518	894,268	73
" 1899-1900	...	...	454,261	896,653	20
" 1900-01	...	...	469,238	884,666	64

The cropped area has thus fallen to not much more than two-thirds of the normal. It is unsatisfactory to see that there was practically no recovery last year, and although this is generally due to the severe losses of the previous year, there were some special reasons which prevented some recovery which might otherwise have been made. At kharif sowing time there was a serious epidemic of cholera which interfered with cultivation, and at rabi sowing time there was great shortness of the seed supply. With such serious deterioration no attempt has been made to collect the full revised revenue. The collections have been as follows:—

Year.				Demand.	Collections.
				Rs.	Rs.
1897-98	...	...	...	* 2,69,562	2,16,541
1898-99	...	...	...	2,73,231	2,48,797
1899-1900	...	...	...	2,92,255	6,137
1900-01	...	...	...	2,94,512	2,06,674
Total				11,29,560	6,78,149

* Includes arrears for previous year Rs. 37,990.

These figures show a collection of hardly 60 per cent. of the demand, and considerable remissions have been necessary. The revised settlement has thus not been enforced in the face of the deterioration caused by the famines, and very careful revenue administration will be required to see that relief is given from year to year in deteriorated villages until the district has recovered.

9. The revised settlement came into force in July 1897 and July 1898 in the Betul Tahsil and will run to 1912 and 1913, while that of the Multai Tahsil was announced from July 1898 and July 1899 and will run to the year 1913. The total cost of settlement operations including Rs. 8,277 for the survey and settlement of the area excised from Government forest was Rs. 1,86,156 or Rs. 68-5-0 per square mile ; but the Settlement Officer observes that certain reductions should be made for the survey and settlement of plots excised from Government forest and for the deputation of himself and his assistants on other work, and calculates that Rs. 65-14-9 per square mile has been the true cost.

10. The Administration has already recognised the high standard of the work of Mr. B. P. Standen, I. C. S., C. I. E., as a Settlement Officer, and nobody can examine his detailed assessments without appreciating the earnest and thorough manner in which he carried out the difficult task entrusted to him. The district was very fortunate in securing the services of this officer with his unrivalled local experience to administer it during the worst famine in its history.



I have the honour to be,

Sir,

Your most obedient Servant,

F. G. SLY,

Commissioner of Settlements and Agriculture,

Central Provinces.